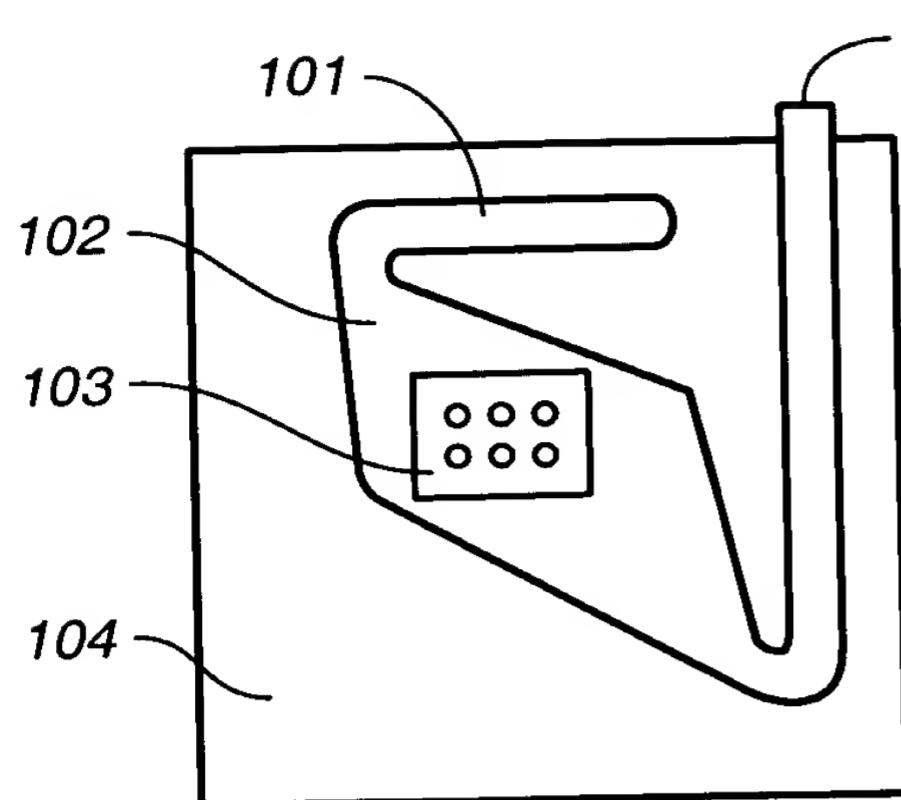
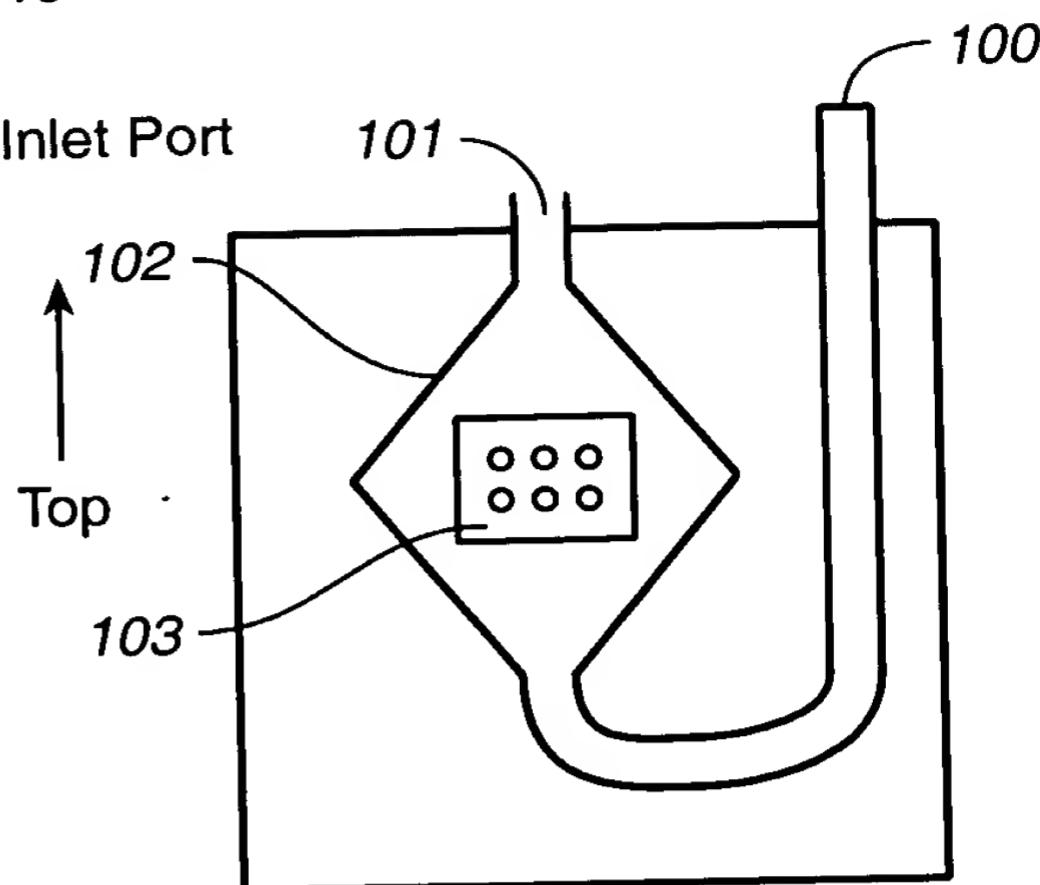
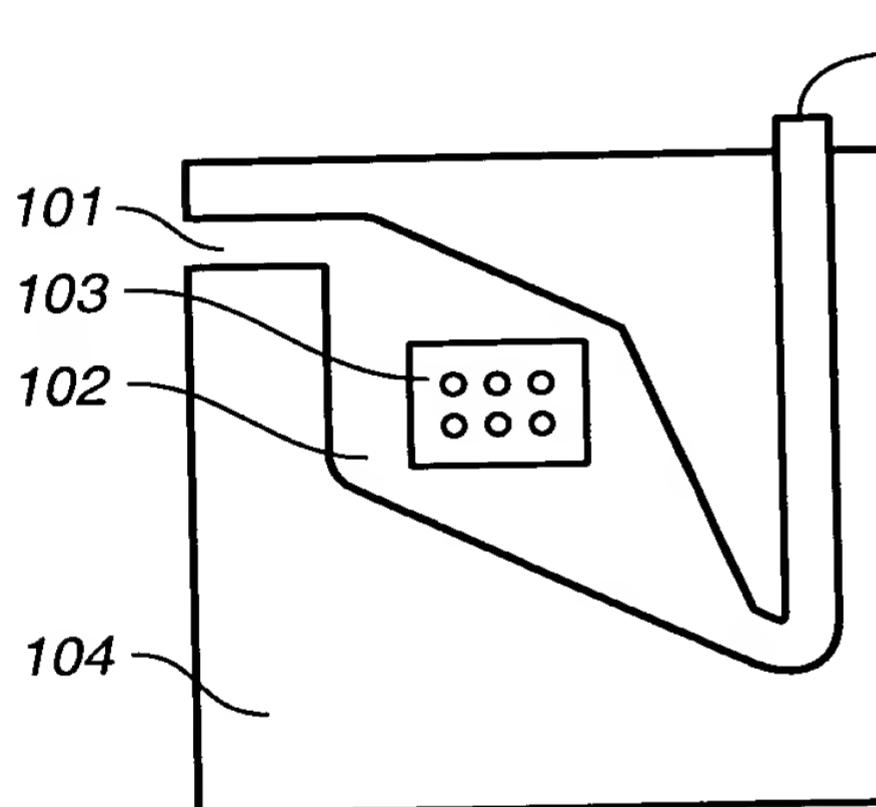
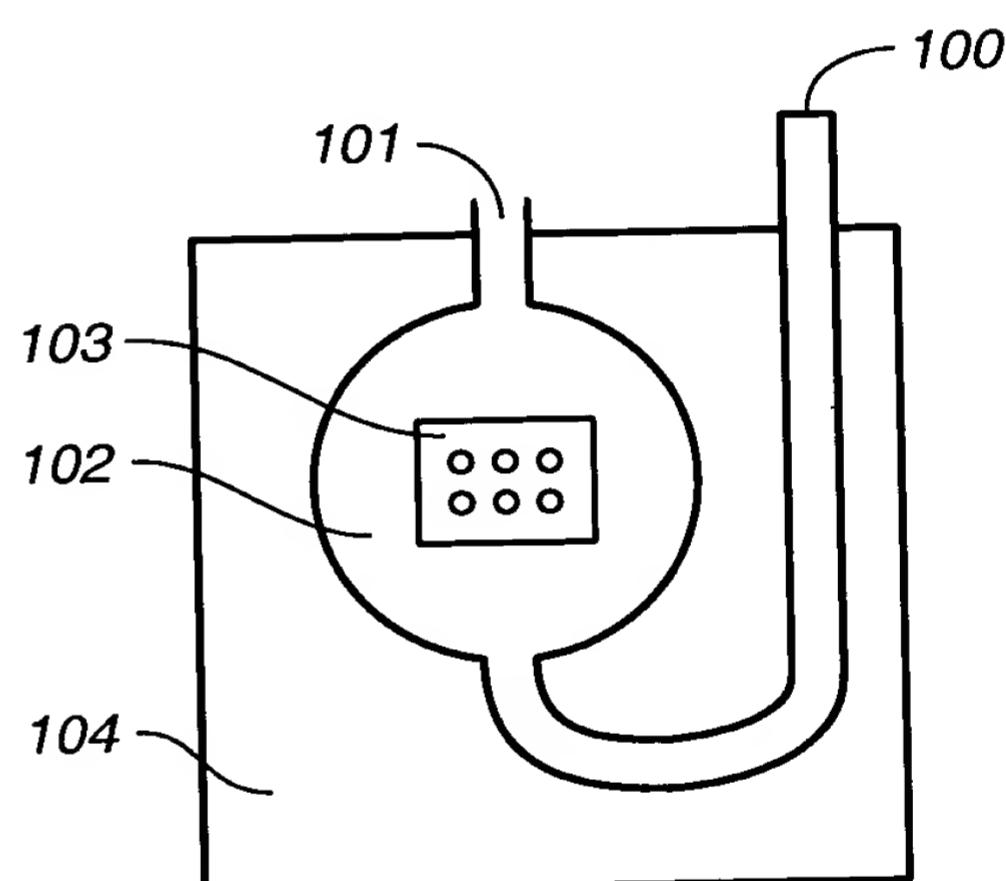
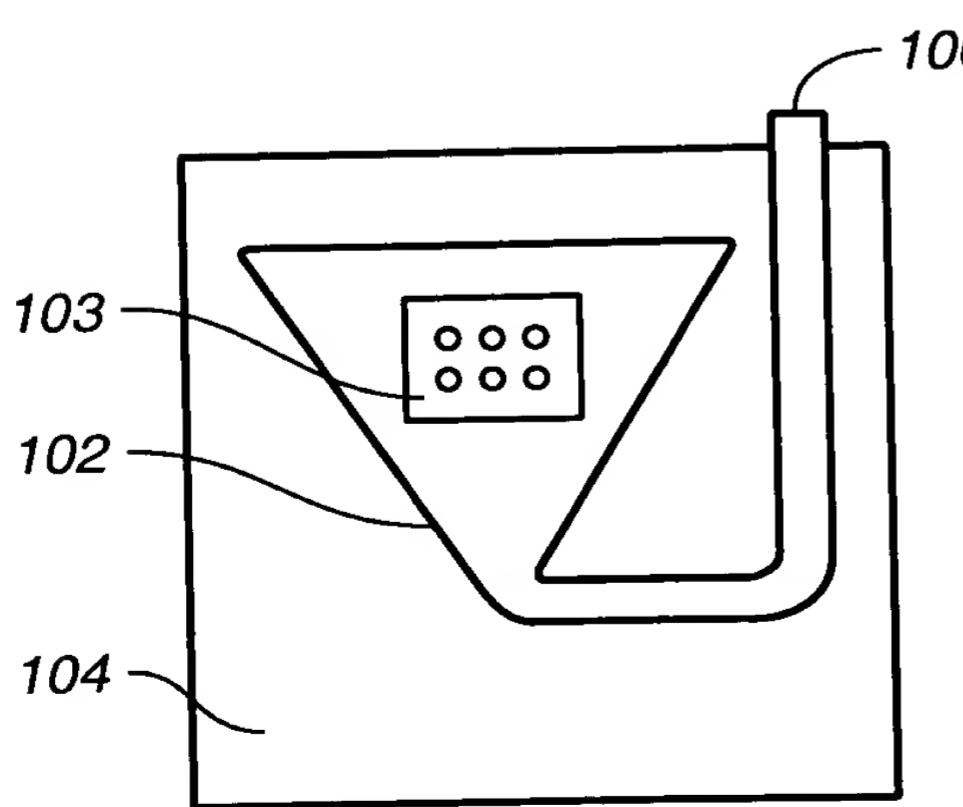
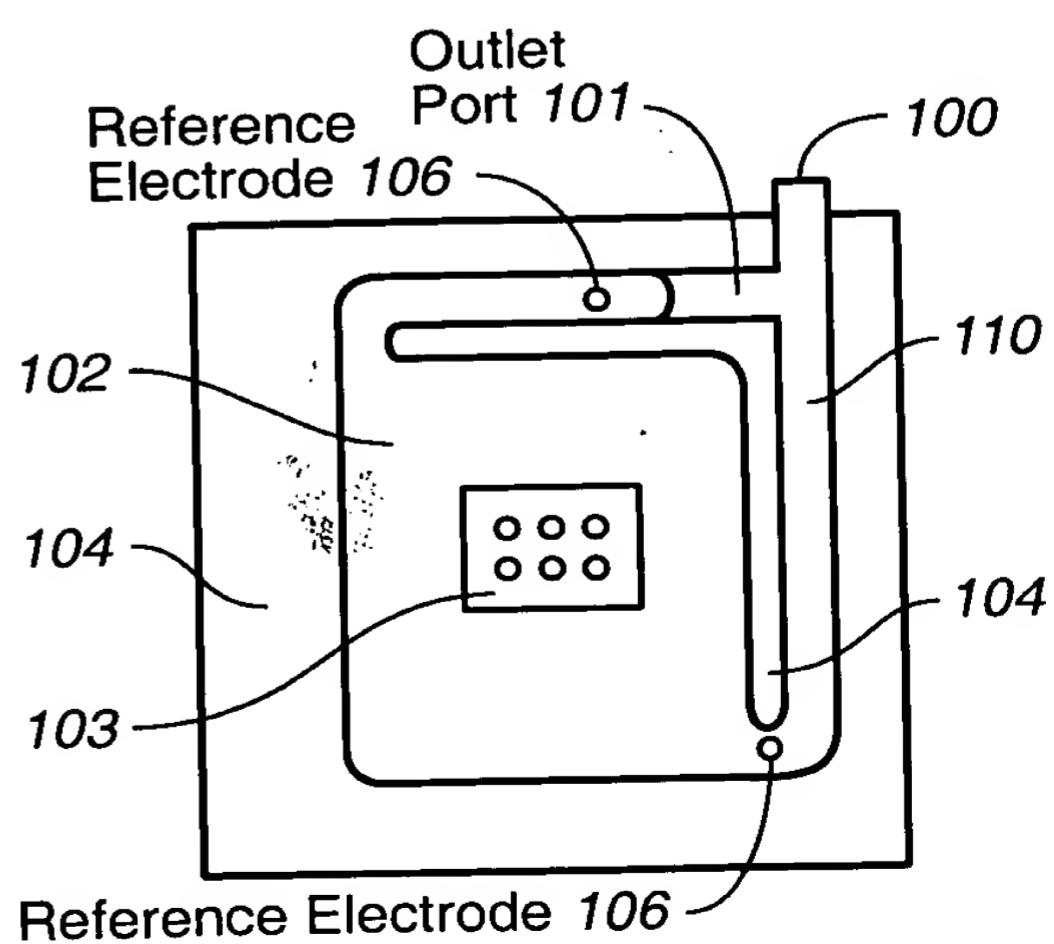
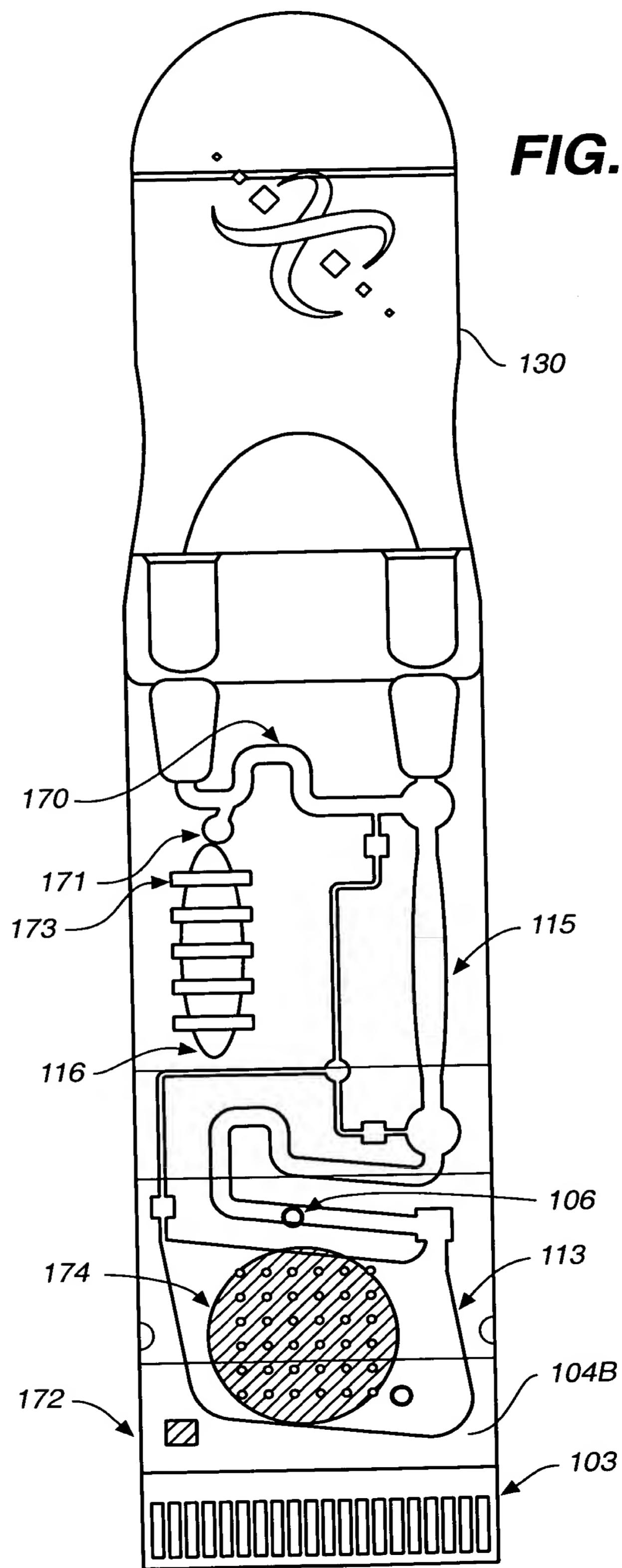


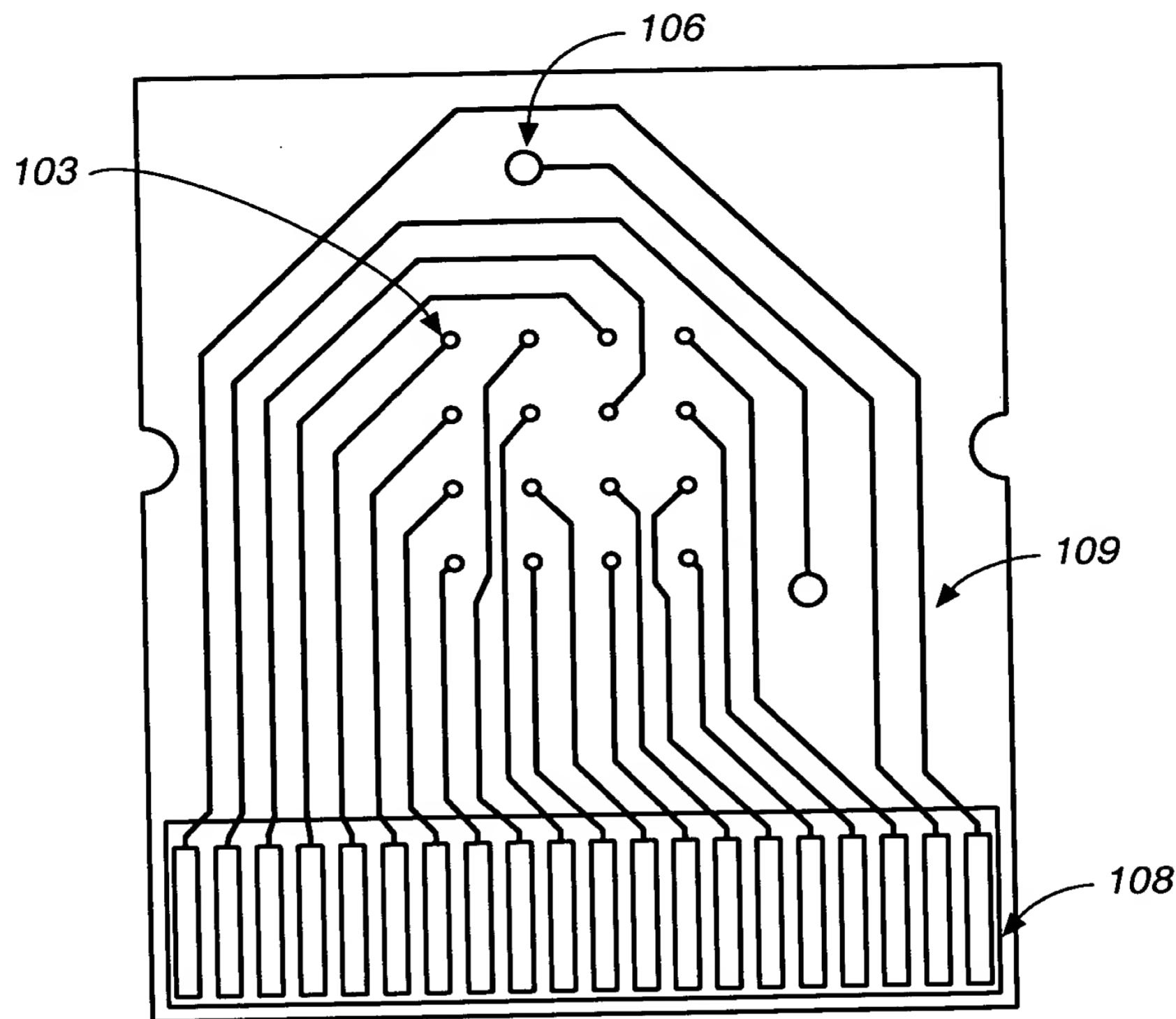
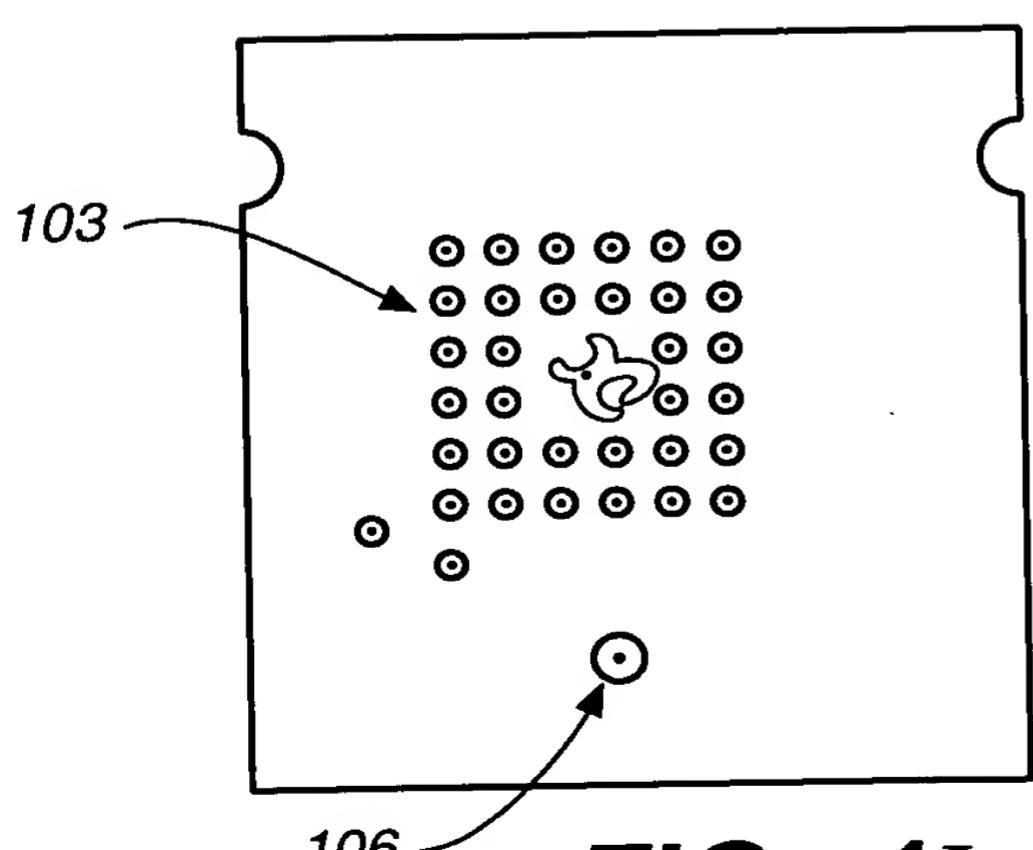
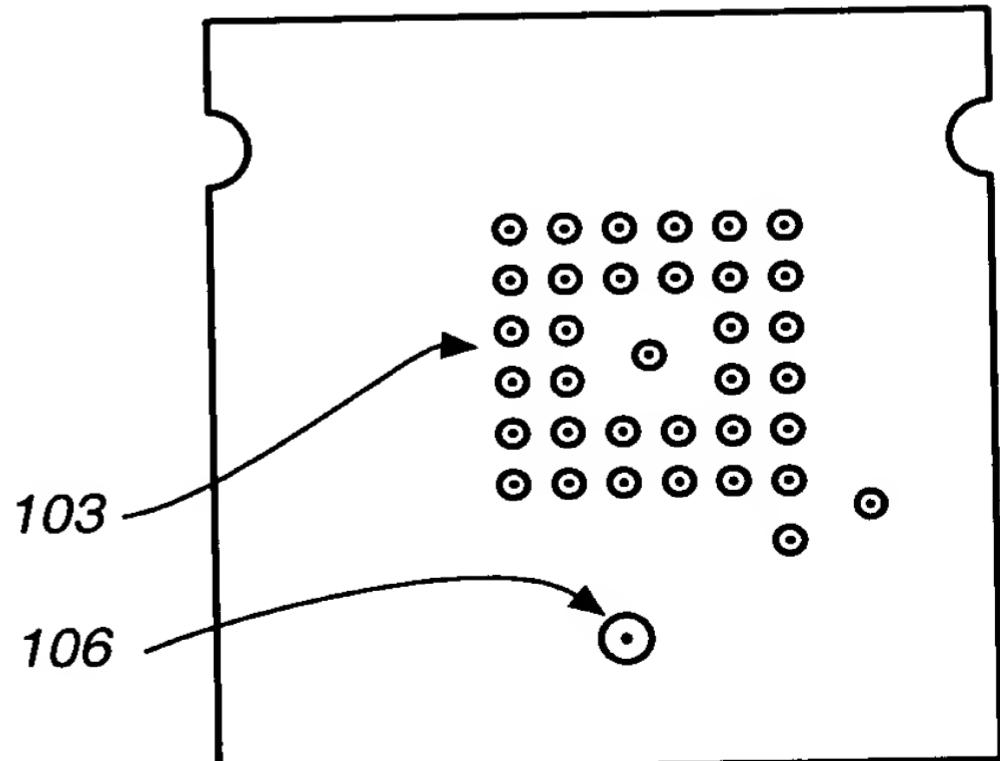
1 / 49

**FIG. 1A****FIG. 1B****FIG. 1C****FIG. 1D****FIG. 1E****FIG. 1F**

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FIG. 1G

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**FIG. 1H****FIG. 1I****FIG. 1J**

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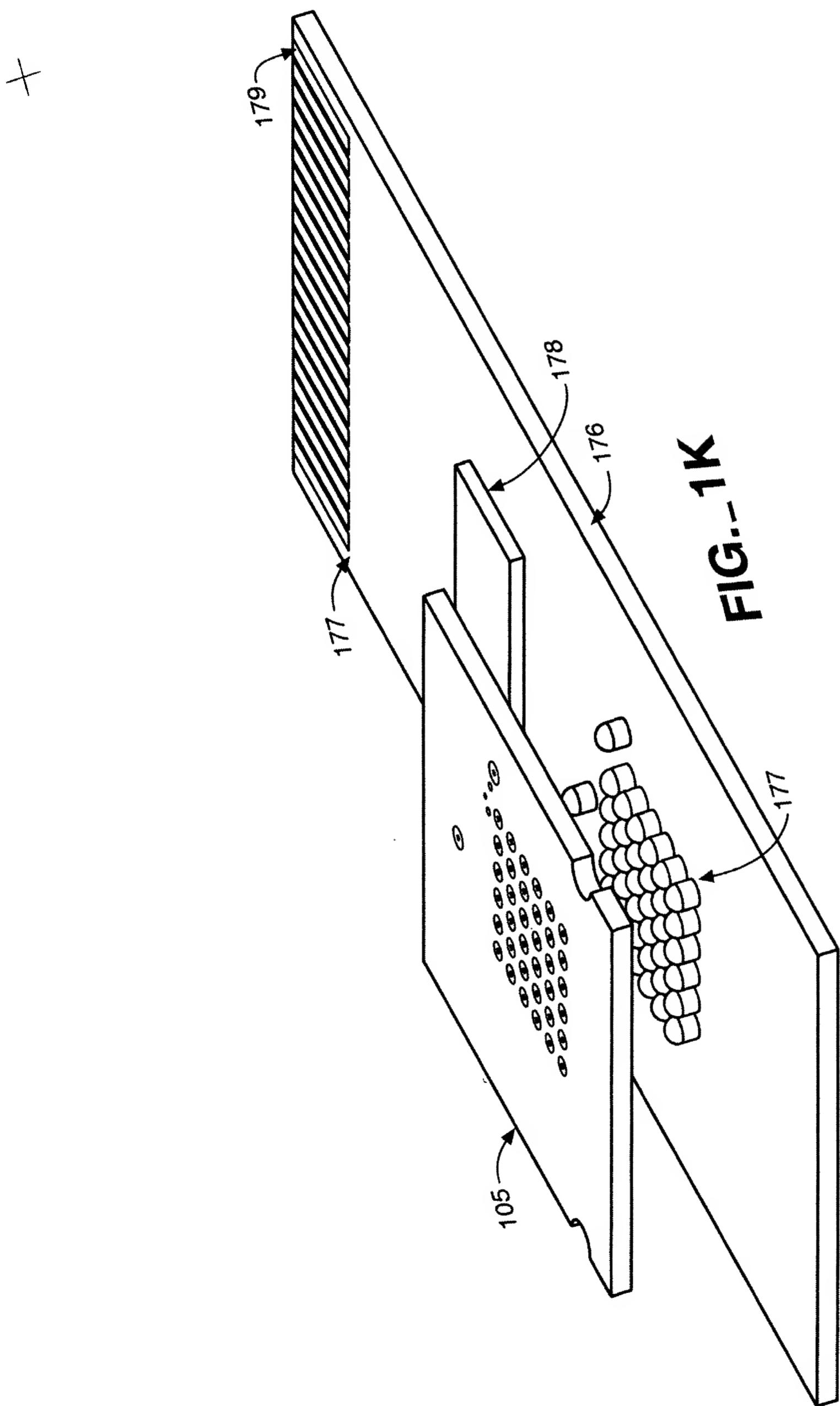
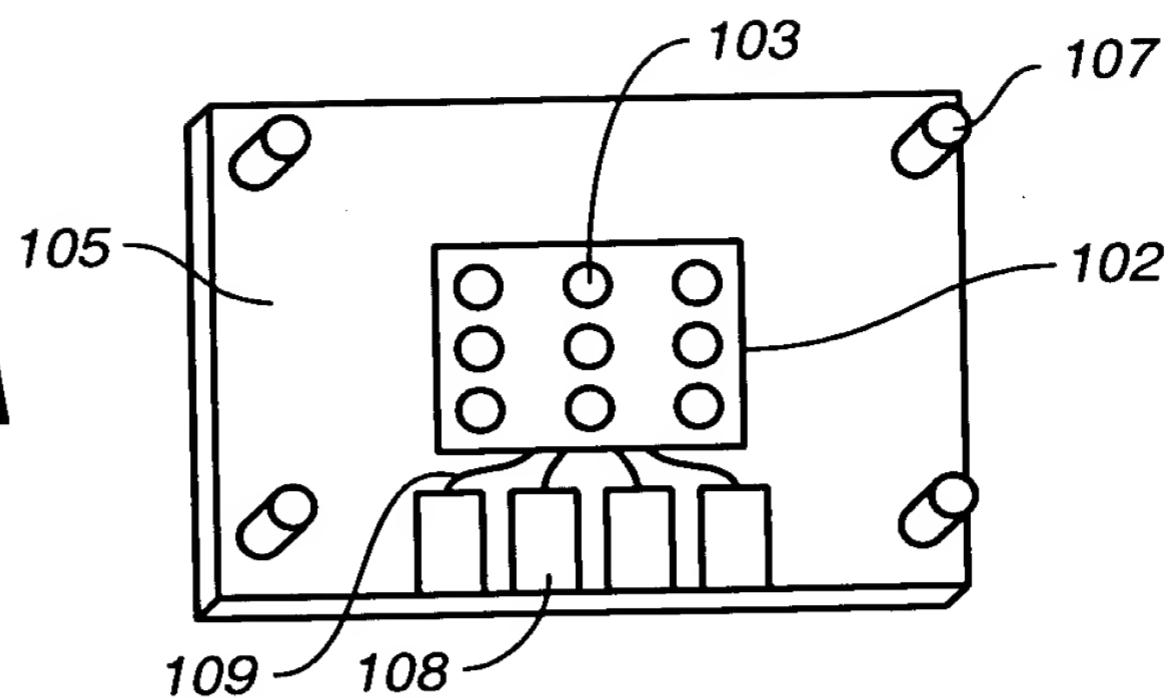
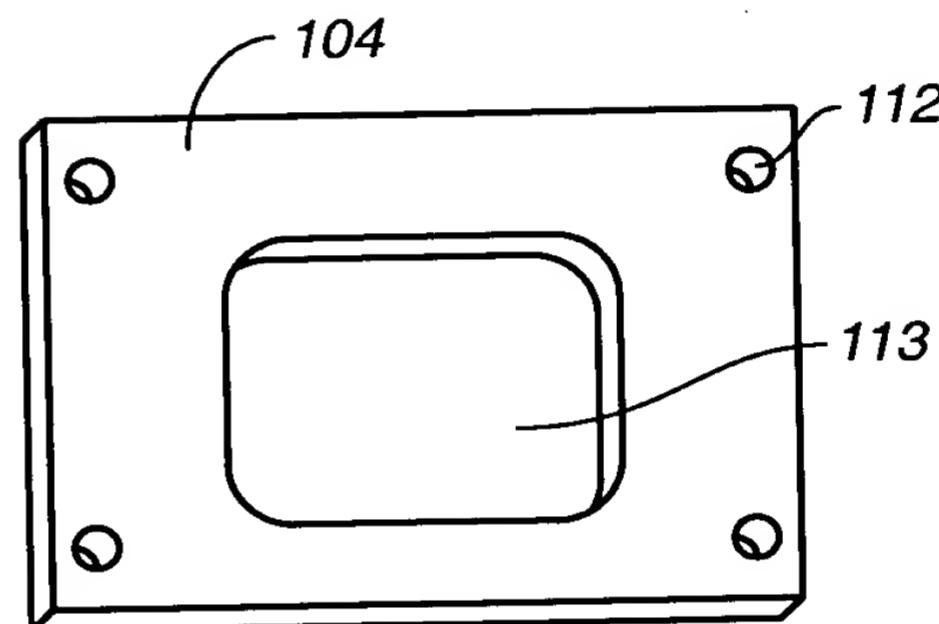
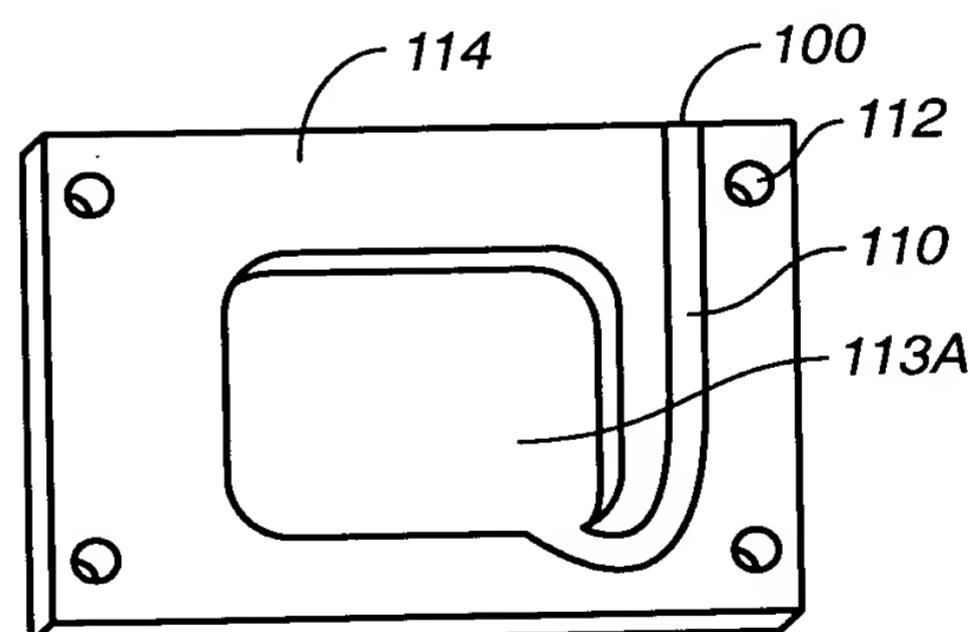


FIG.-1K

FIG._2A**FIG._2B****FIG._2C**

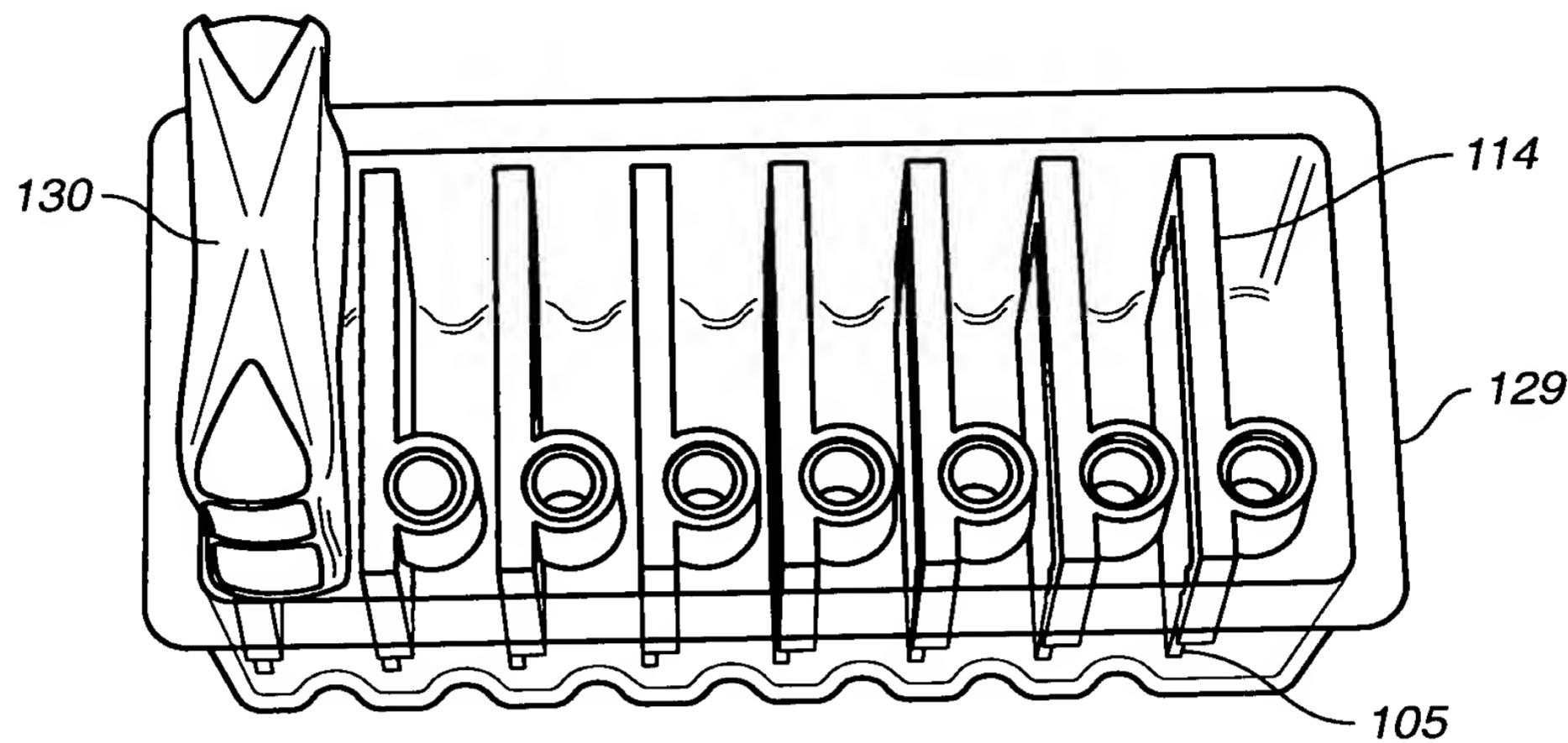


FIG. 3A

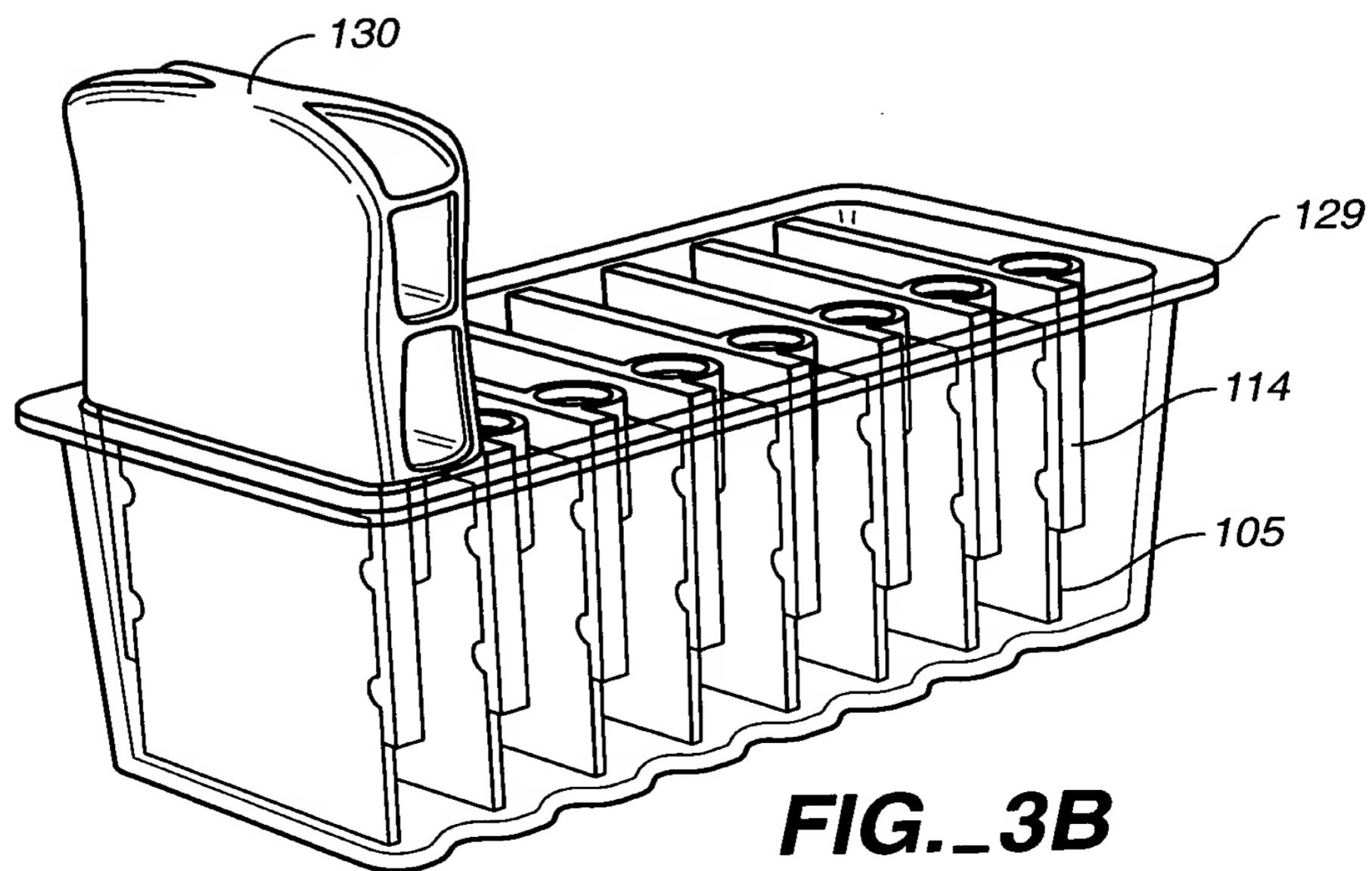
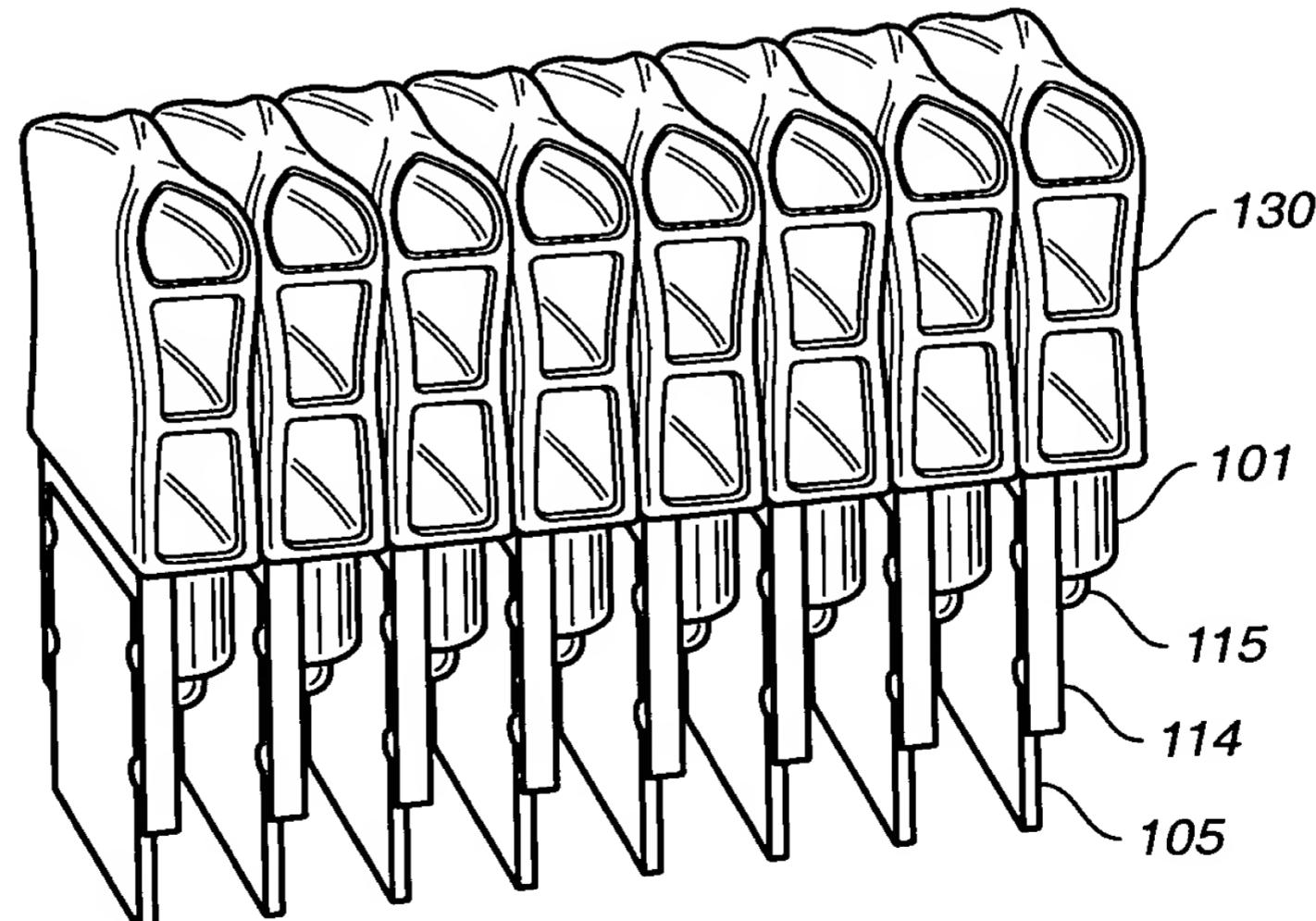
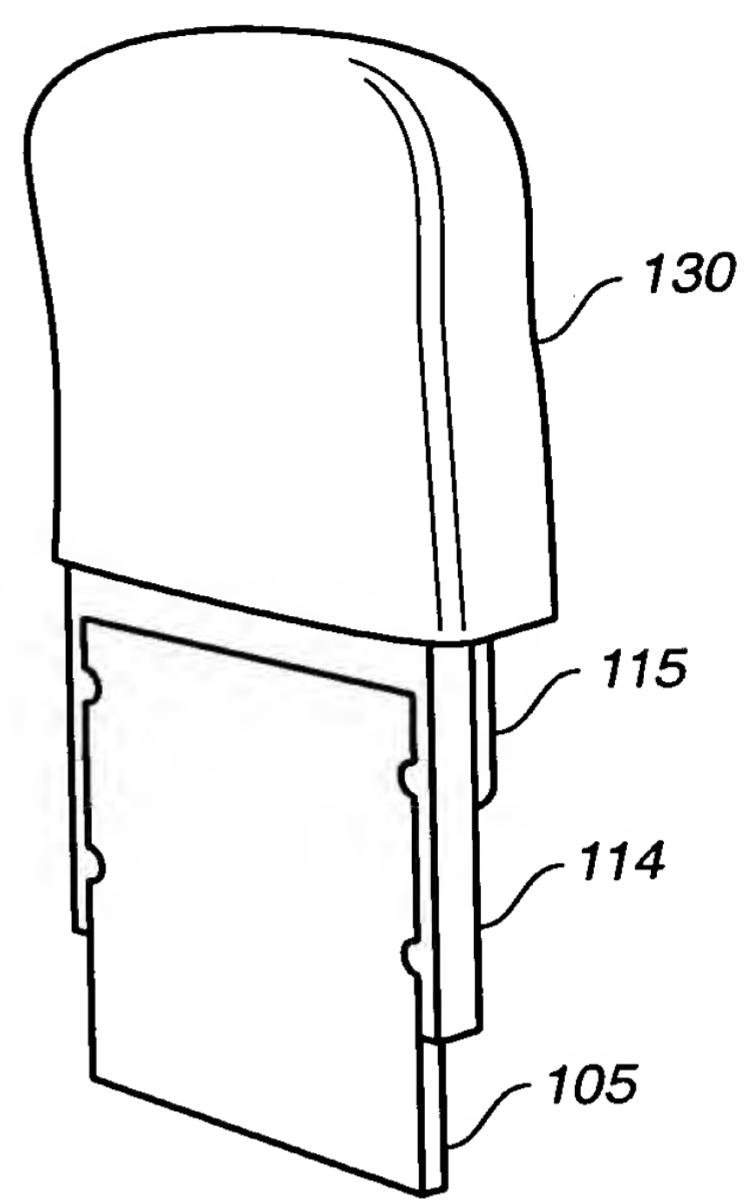
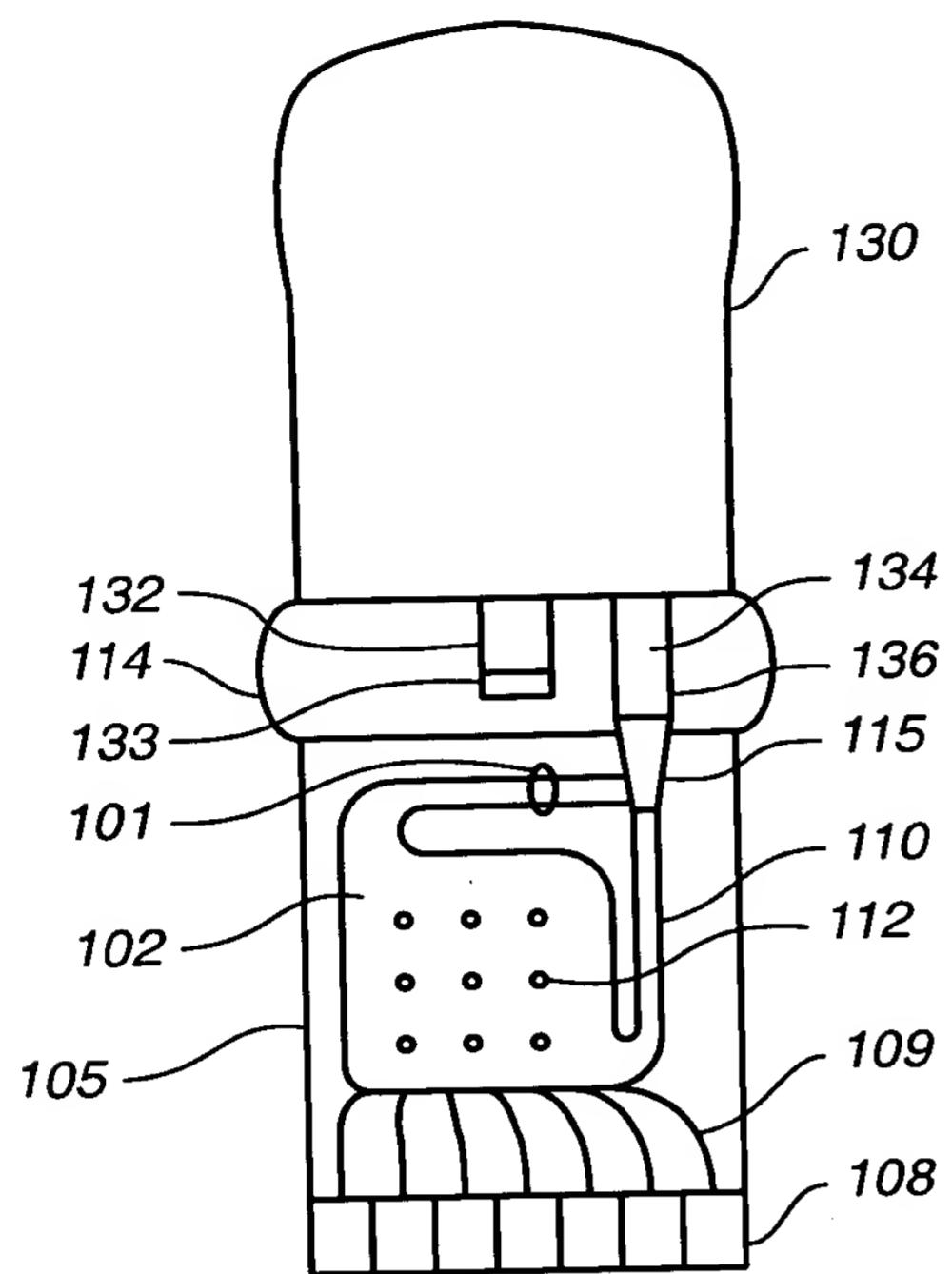
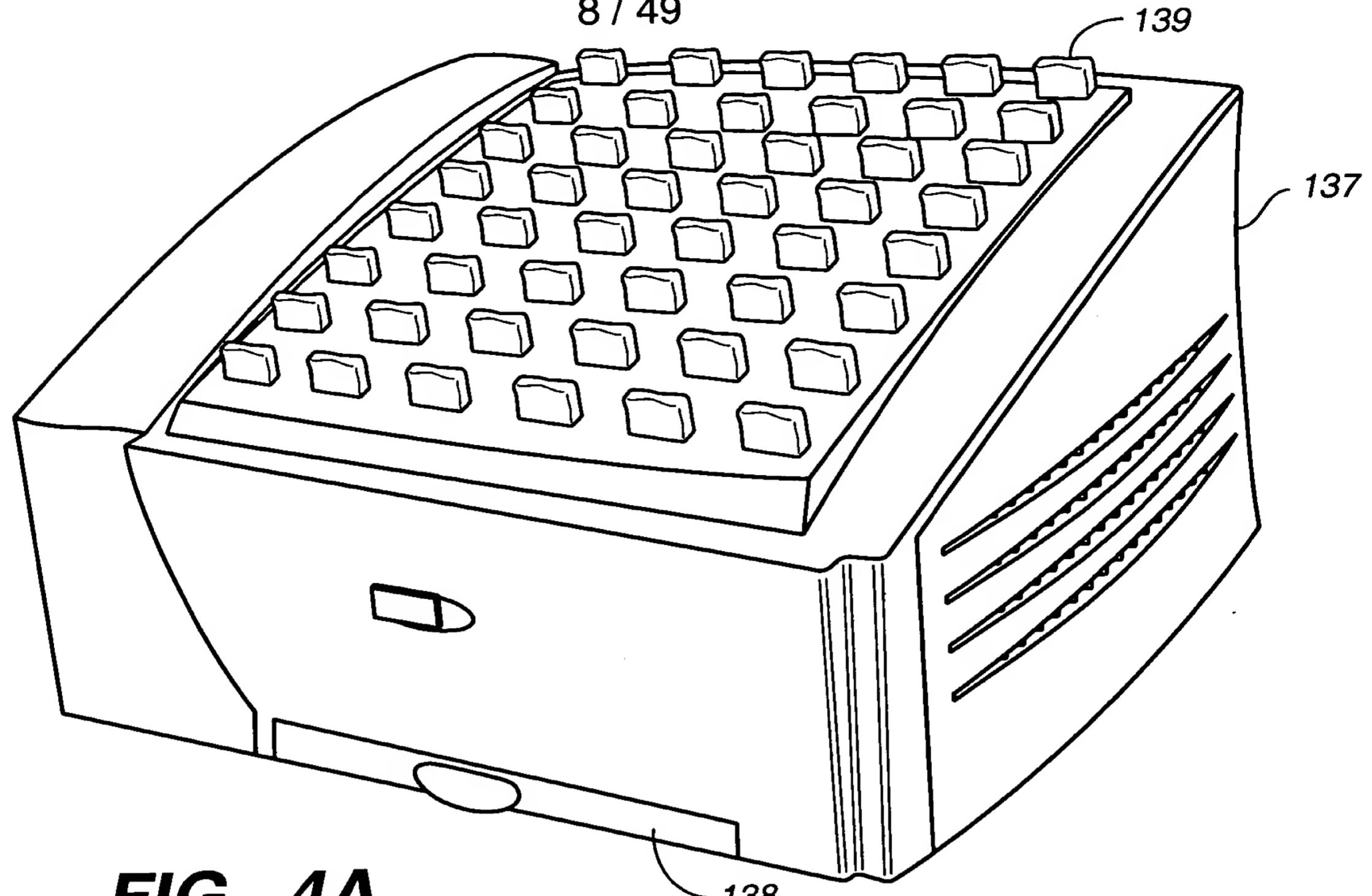


FIG. 3B



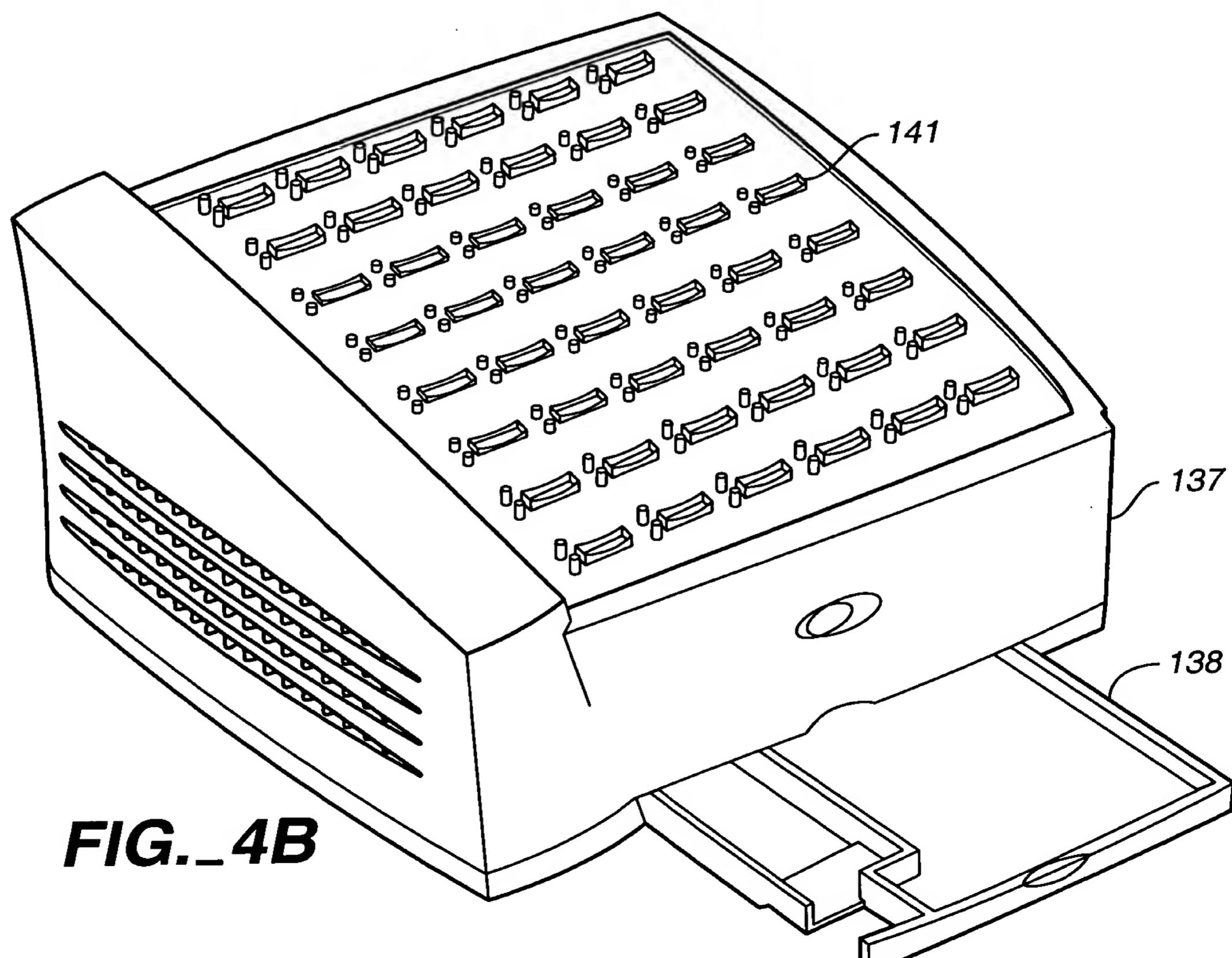
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**FIG. 4A**

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**FIG. 4B**

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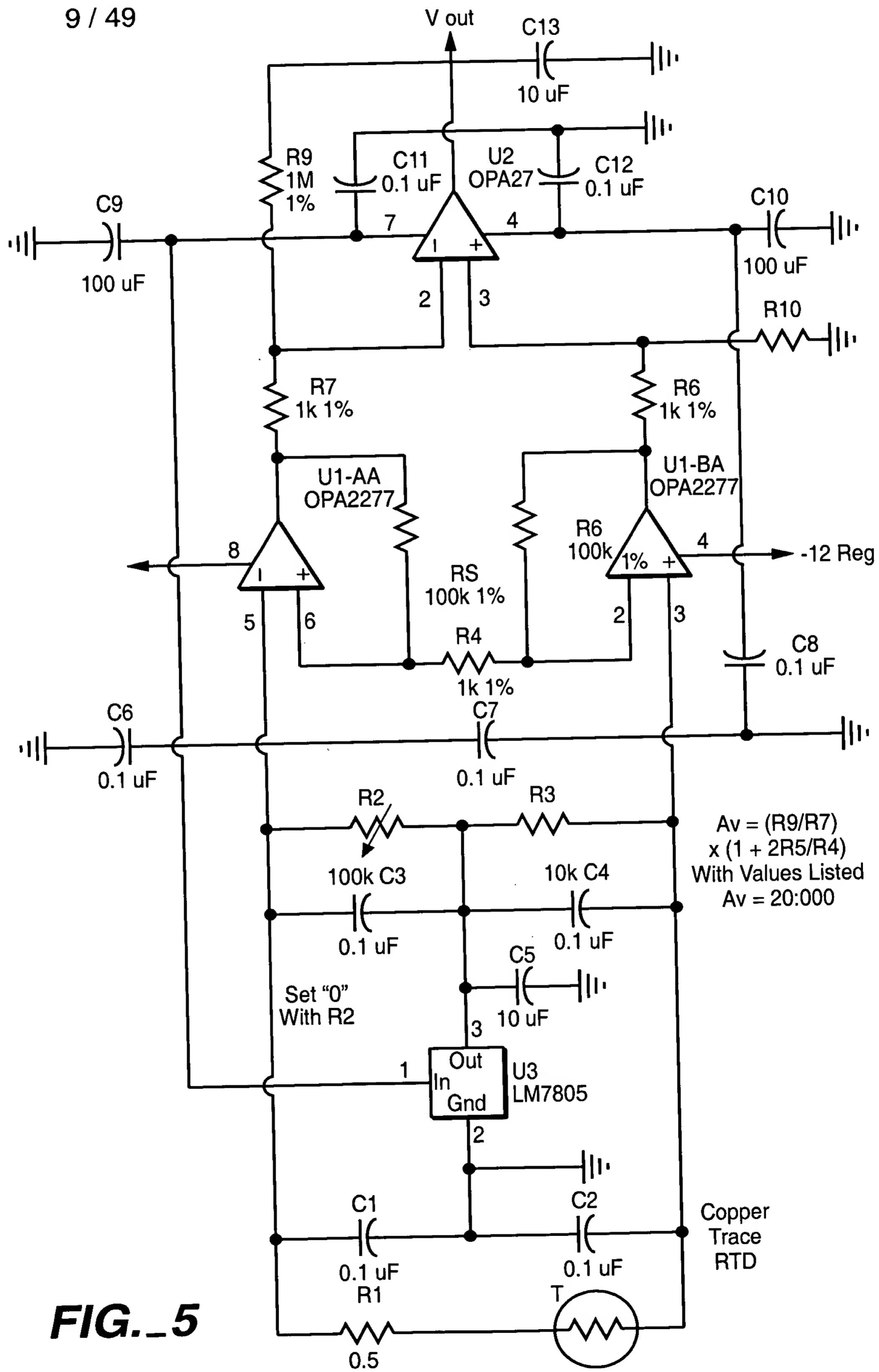


FIG._5

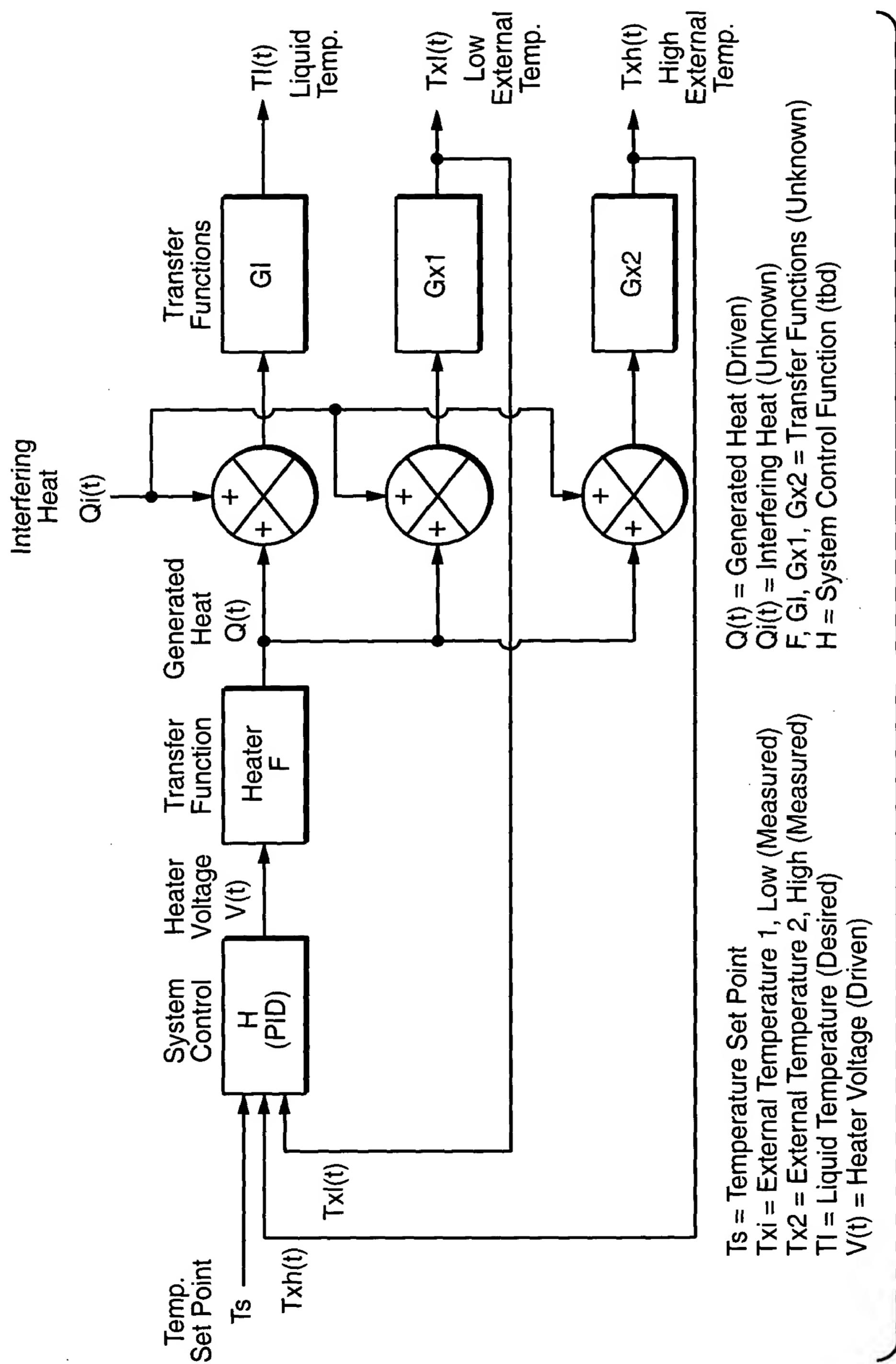


FIG.-6

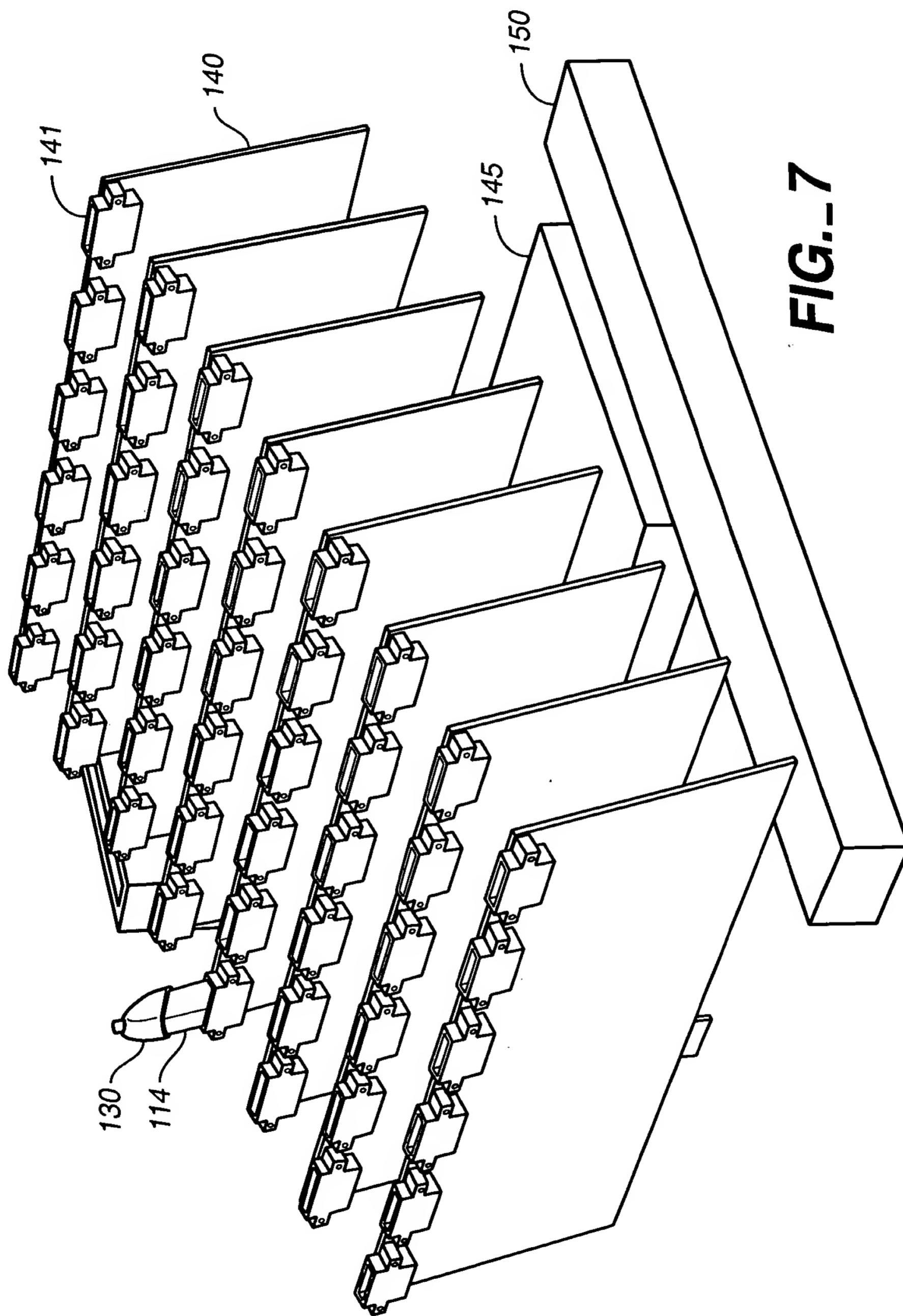
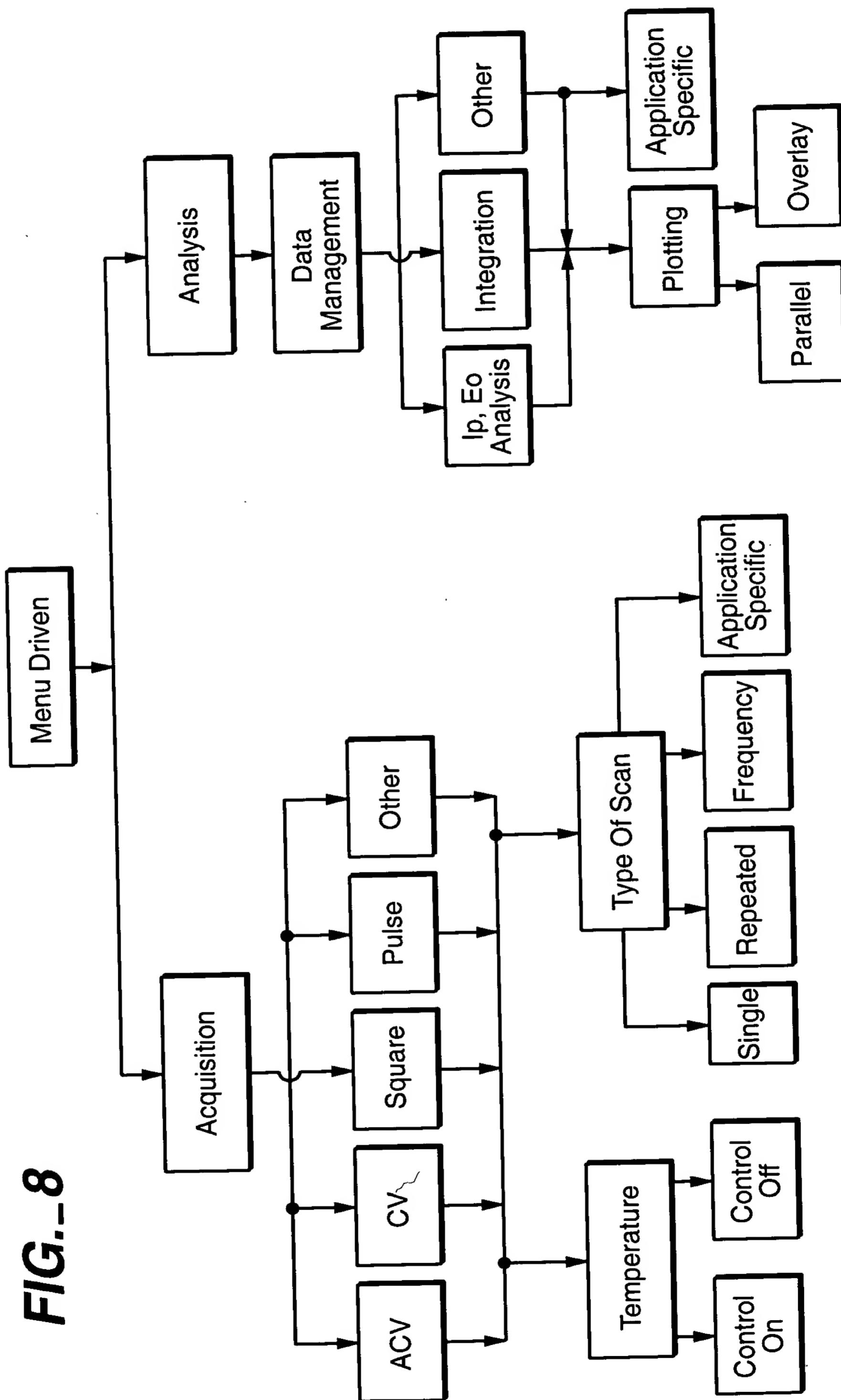
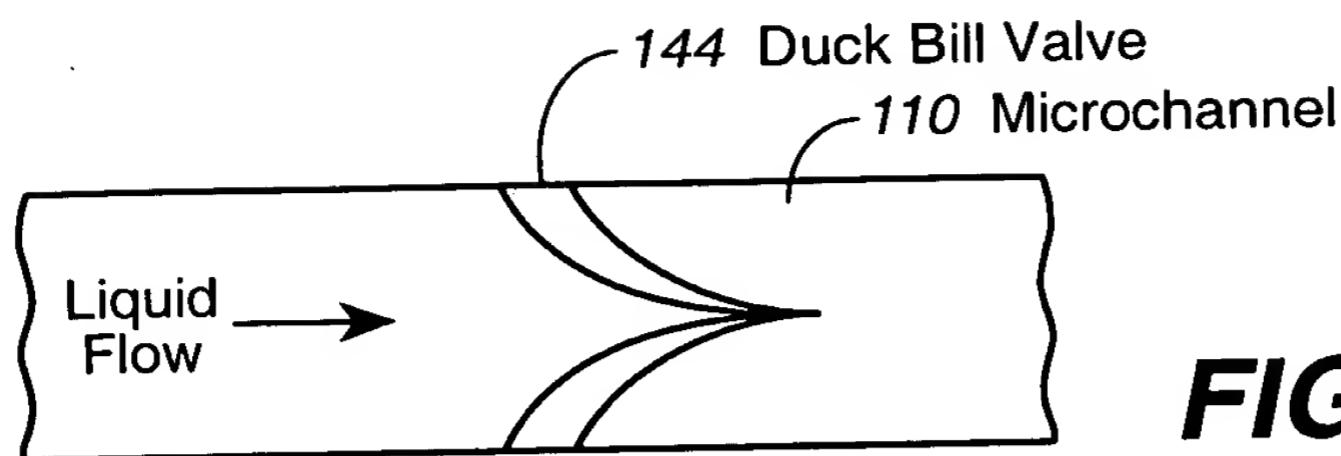
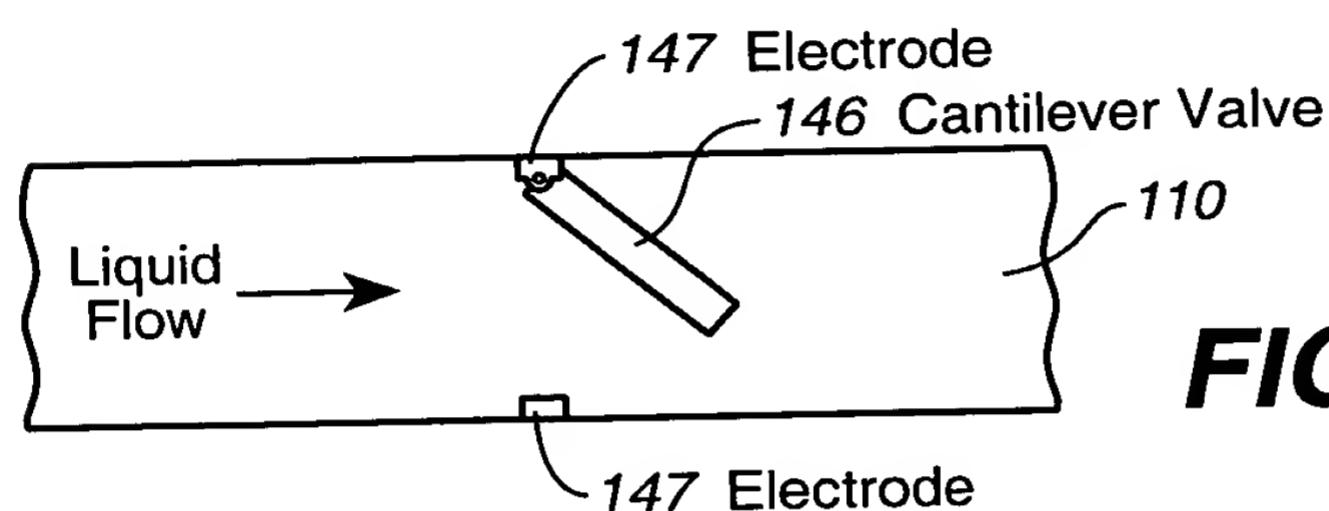
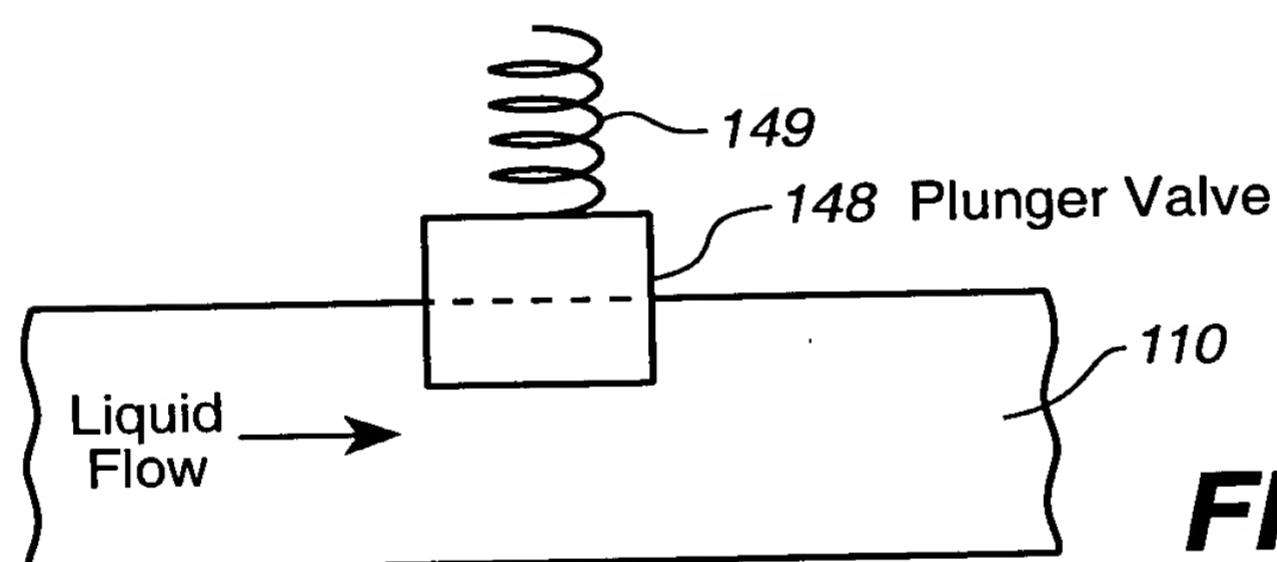
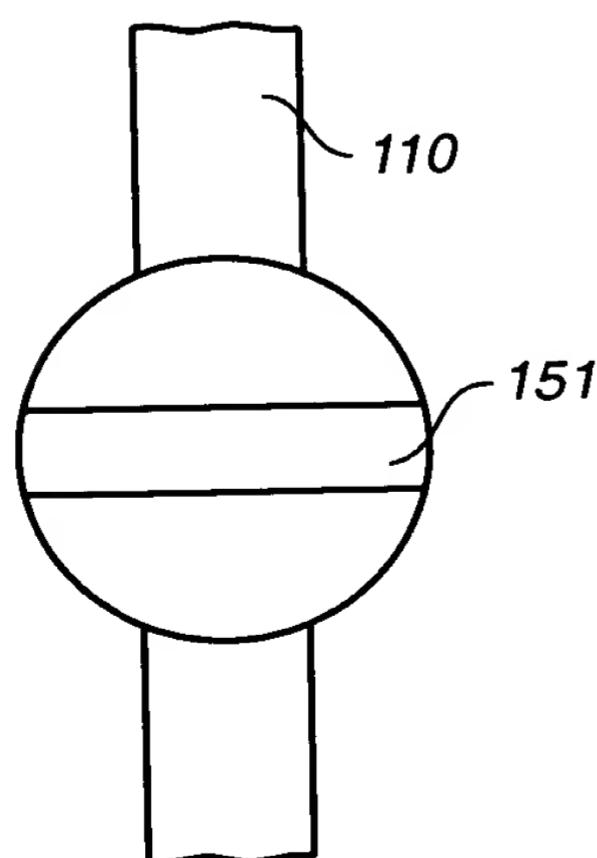
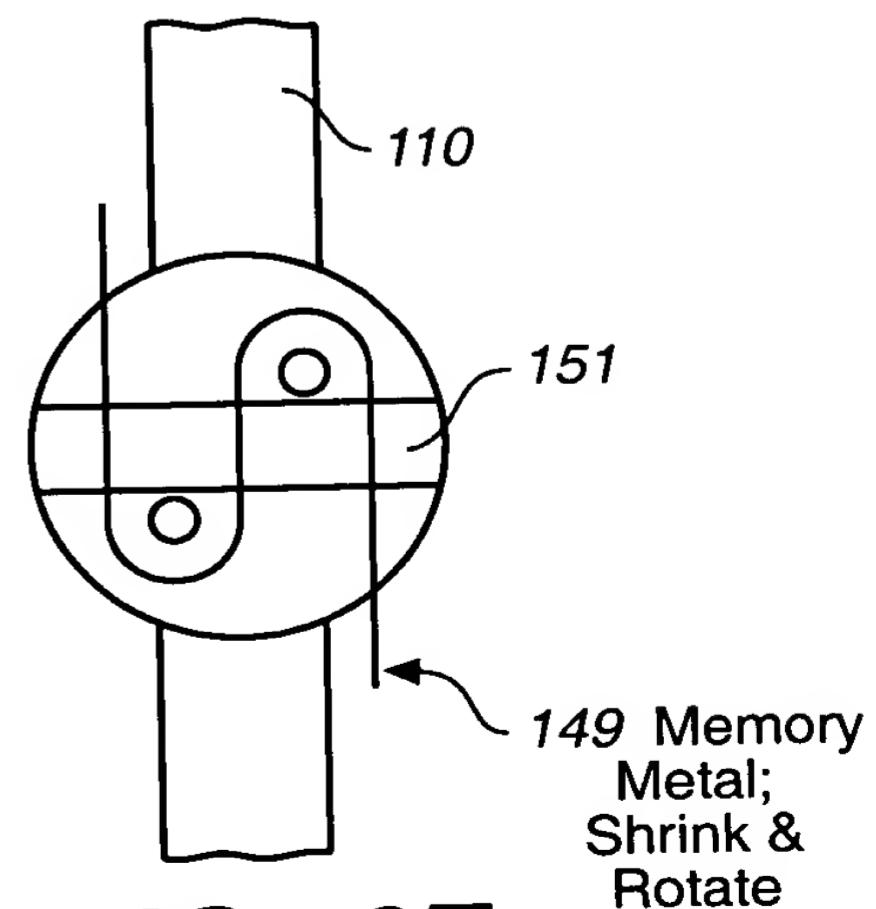
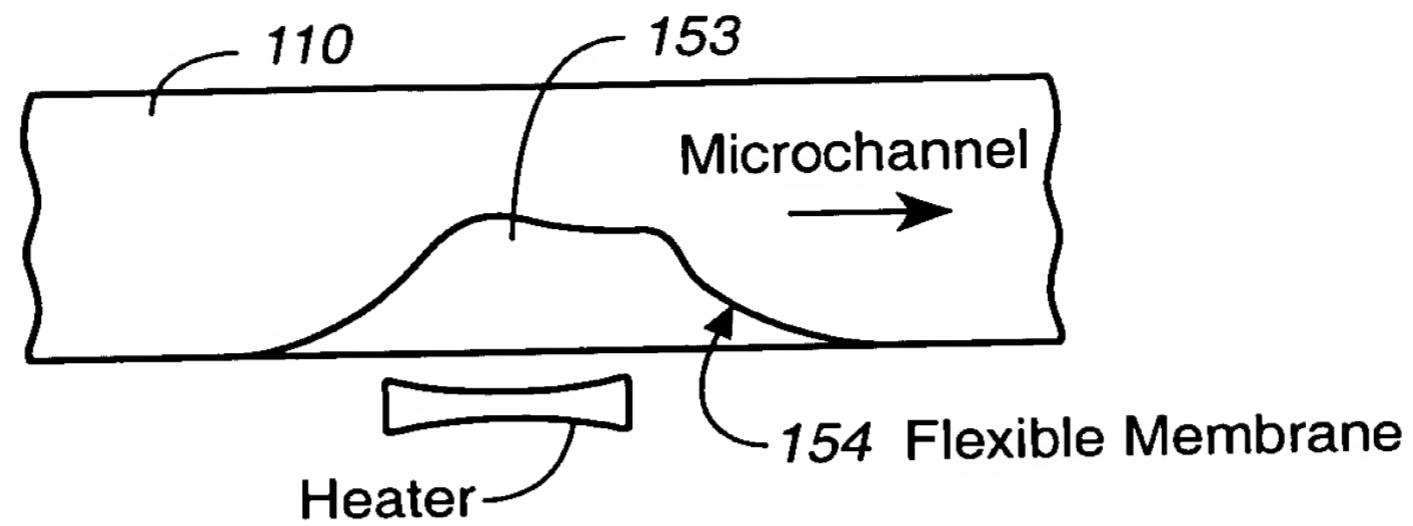
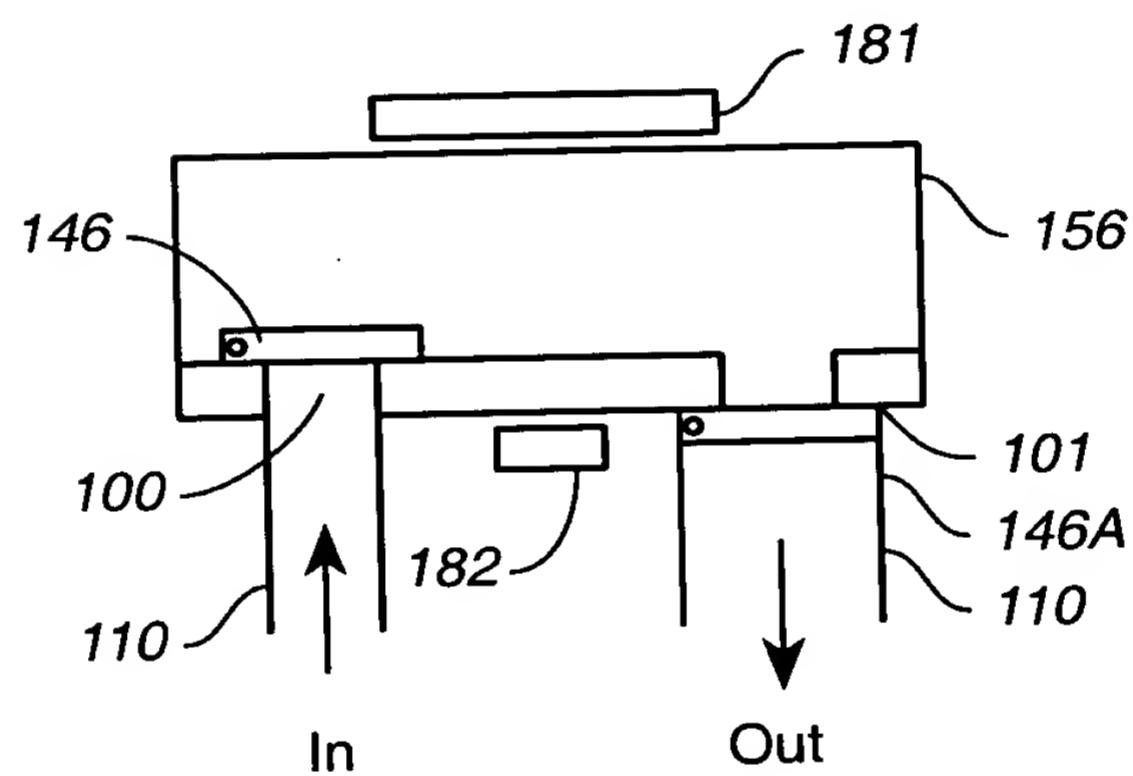
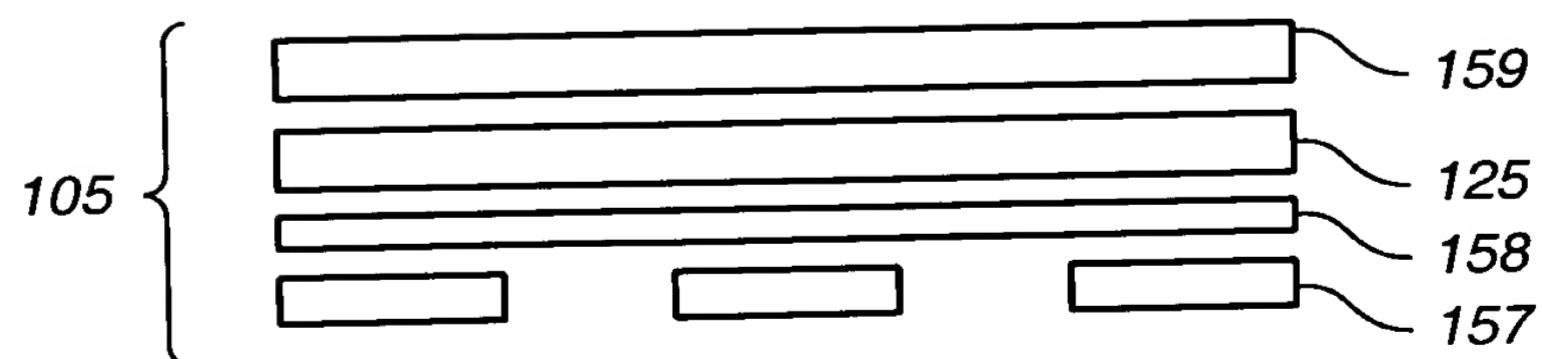


FIG. 7



**FIG. 9A****FIG. 9B****FIG. 9C****FIG. 9D****FIG. 9E**

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**FIG._9F****FIG._9G****FIG._10A**

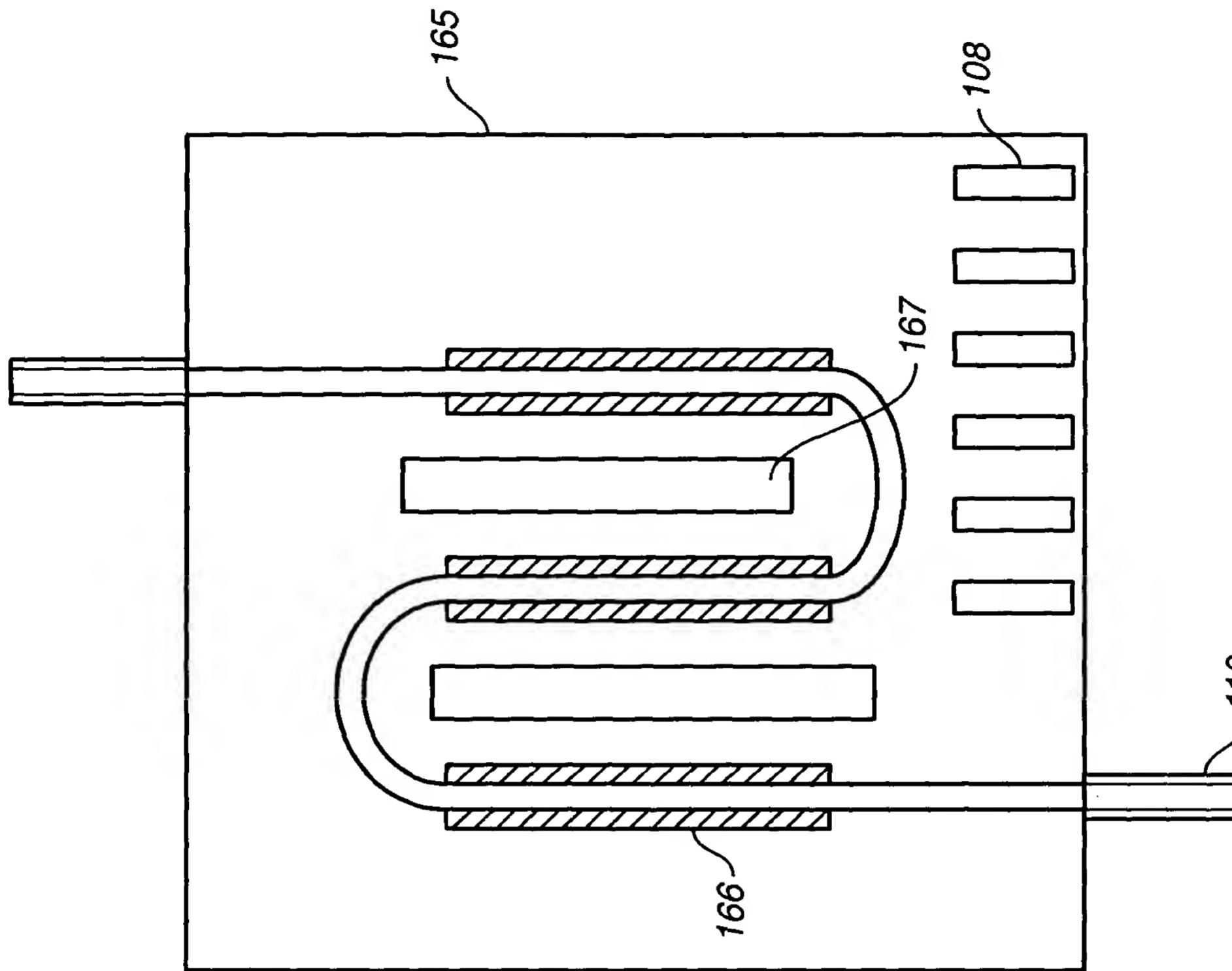


FIG. 10C

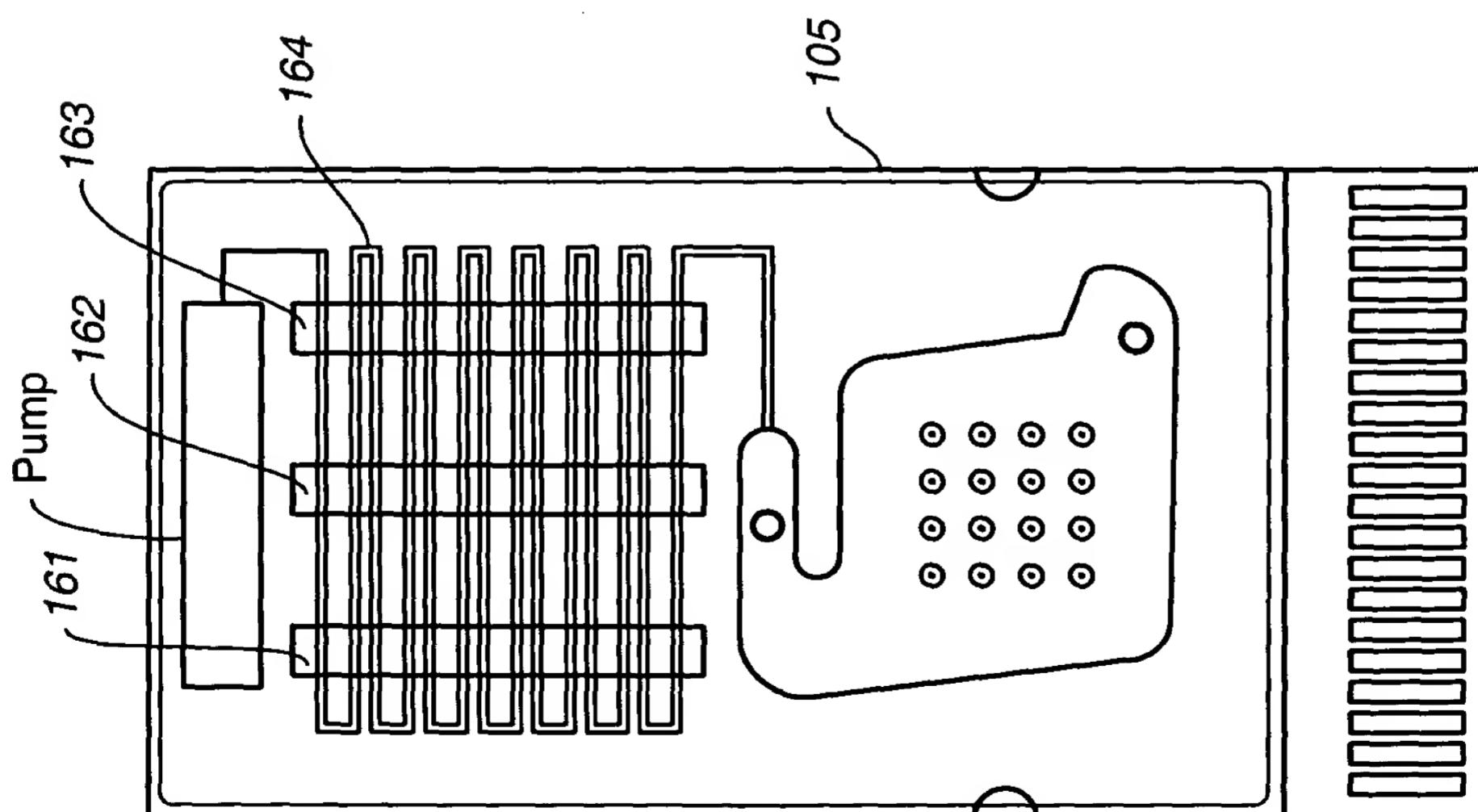


FIG. 10B

- Bar coded “reference” sheet, stored in tray under unit, with bar coded protocols, bar coded well and slot id's, bar coded commands (e.g. “cancel”, “done”, etc.)
- Standard bar code wand (preferably with built-in decoder), housed in the tray (hence hidden when not in use)
- Serial (RS-232/485) interface (preferred), or “keyboard wedge”
- Multi-code support (Code 39, Code 128, etc.)
- Bar code on chip carrier (1 code per “8 pack”), identifying test, batch, etc.
 - Peel off labels, with same code as on carrier, with each “8 pack”

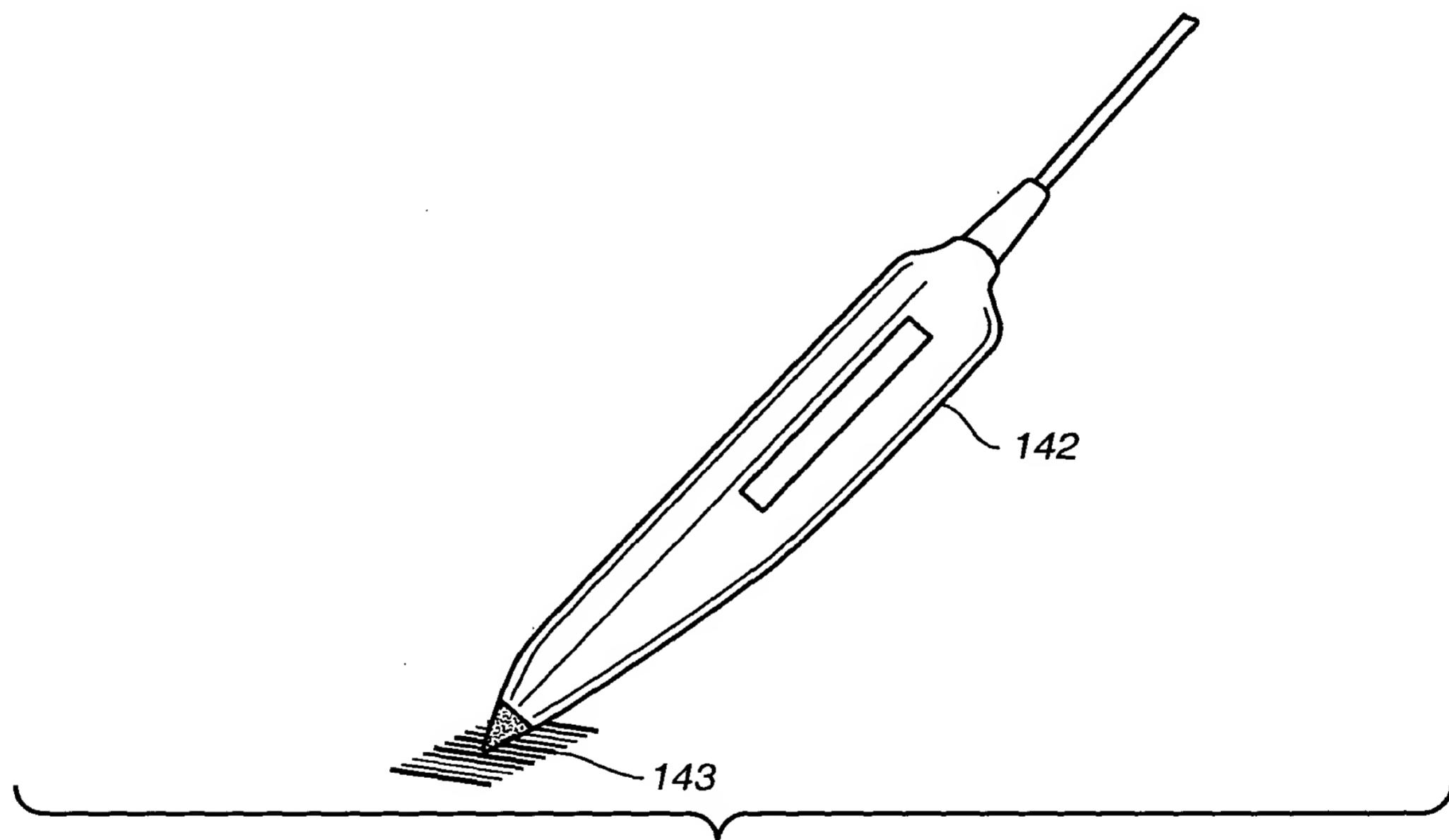


FIG._11

■ Bar code usage scenario

- User fills "8-pack" (all 8, or partially) from a 96 well plate, or from individual sample containers (PCR tubes, vaccutainers, etc.)
- Pull out tray (with bar code reference sheet) and grab wand
- Scan "start" code
- Scan protocol code from sheet (will remain in effect until "done" is scanned)
- Scan chip code from carrier (will remain in effect until "done" is scanned)
- For each cartridge, user will
 - insert the cartridge in an open slot. Unit senses new chip automatically
 - scan the sample ID by either
 - scanning 96 well plate bar code from plate and well code from sheet
 - or scanning unique sample ID from container
 - or scanning "no ID" from reference sheet
- Scan "done" code. The protocol can' now be started on these cartridges

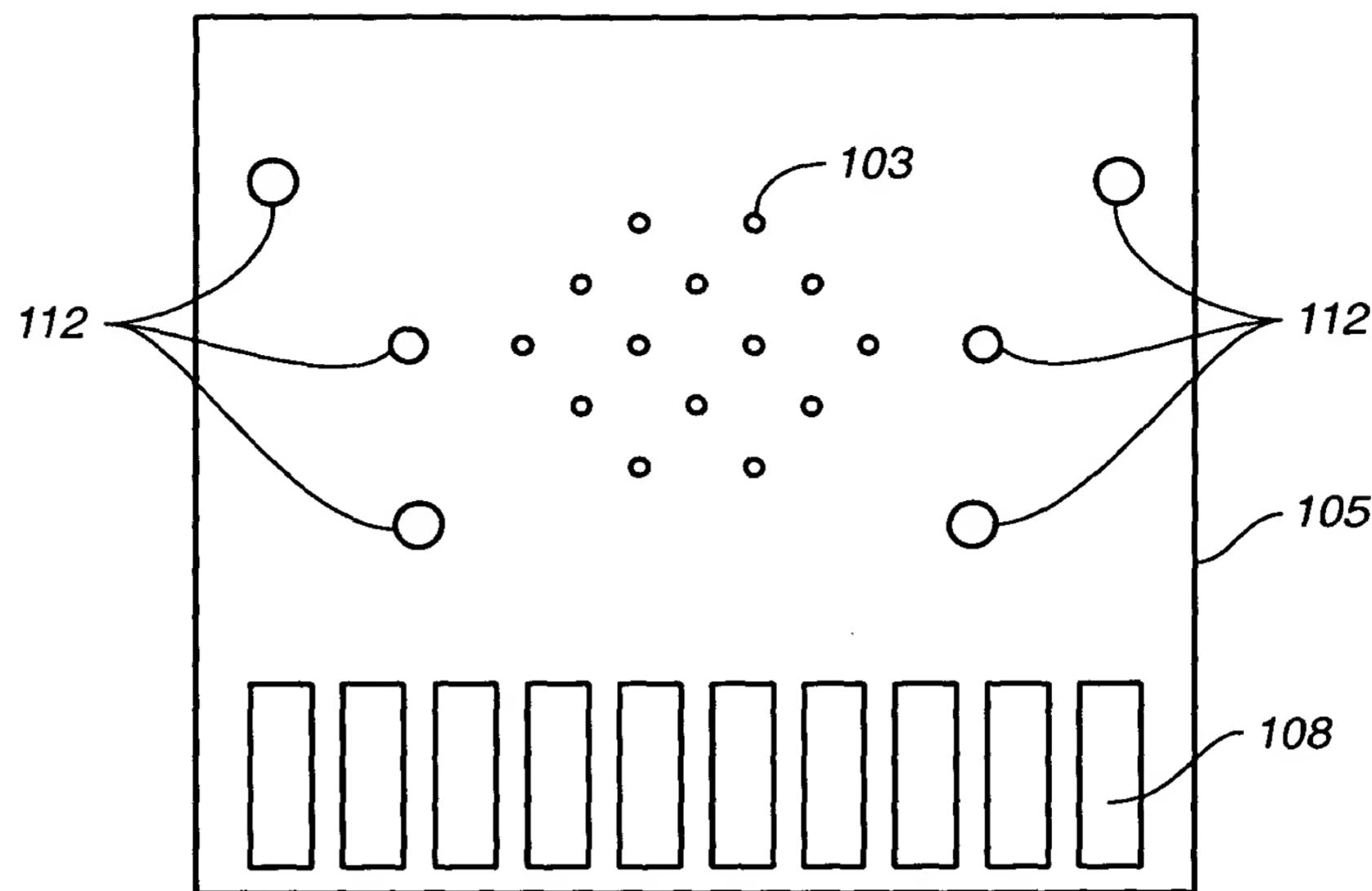
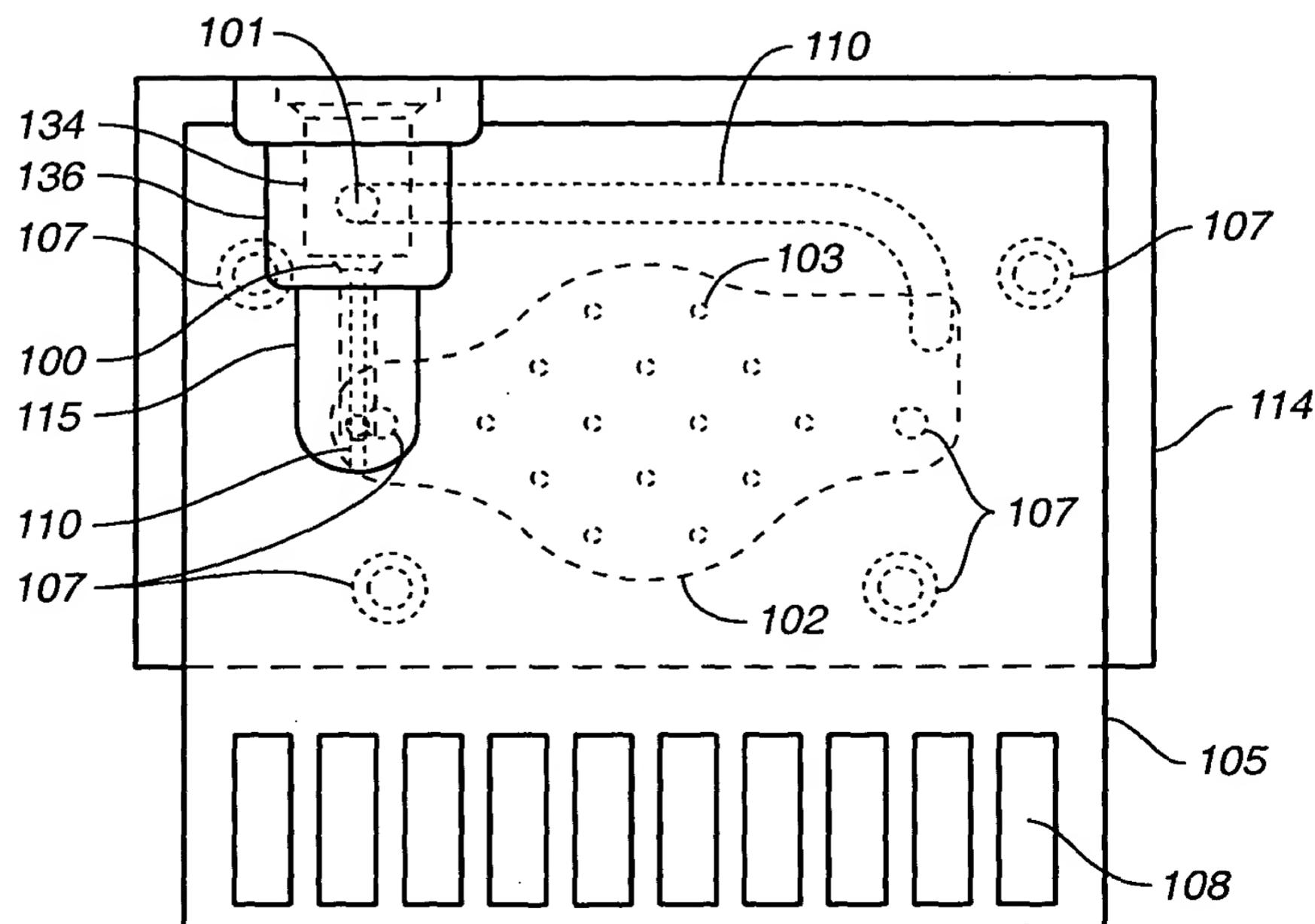
FIG._12**■ Bar code concept benefits**

- No keyboard entry (all-routine setup can be entered via bar coding)
- All routine entries accomplished while in front of unit (no going back & forth between PC & Hydra)
- All bar code entries done from small, flat surface in front of unit
- No need to label each chip or each slot (which would compromise appearance)
- Uses small unobtrusive bar code wand, hidden when not in use
- Is flexible with respect to sample container (tube, 96 well plate, etc.), chip usage (by row of 8, or by individual chip), and lab bar coding method

FIG._13

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**FIG. 14A****FIG. 14B**

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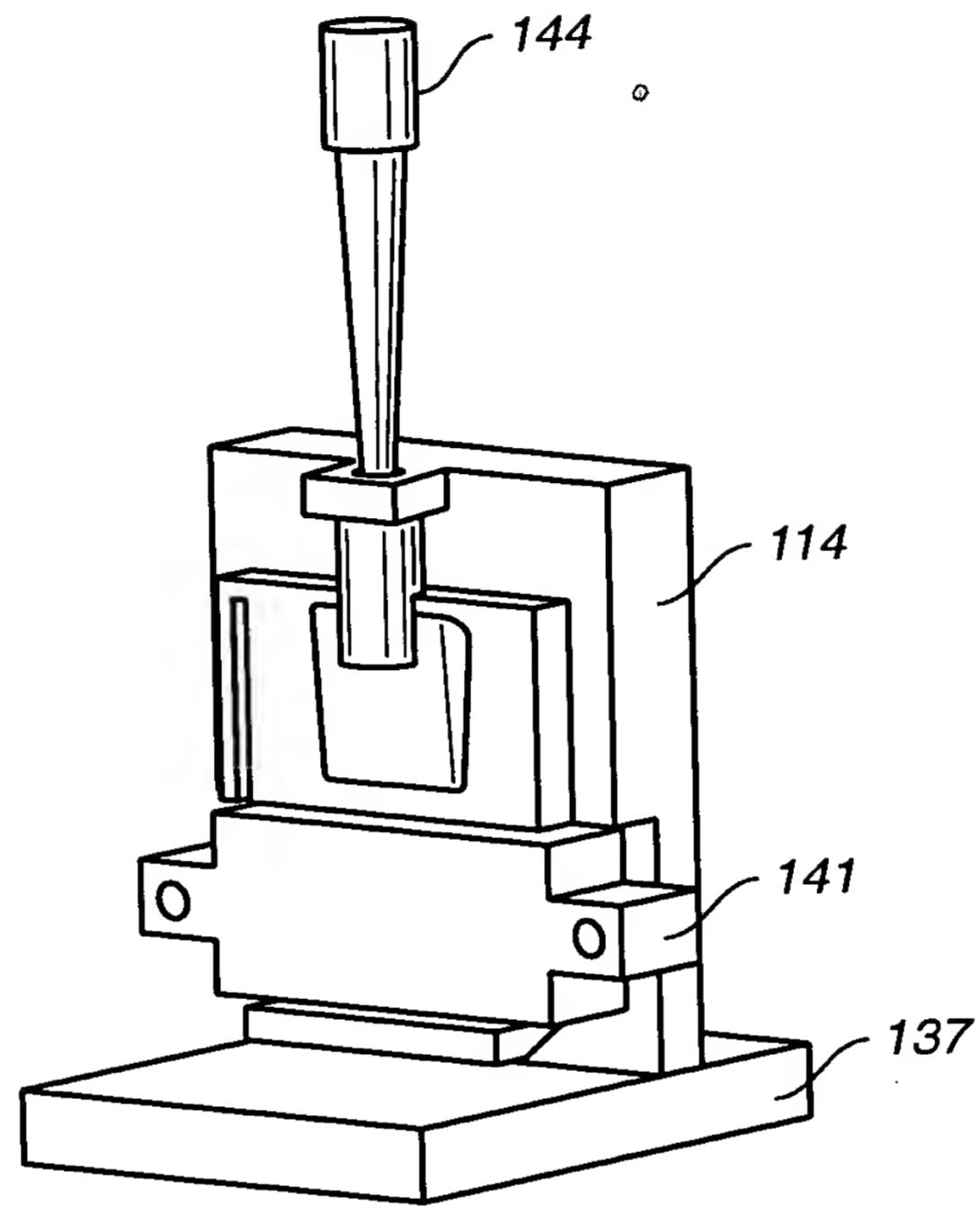
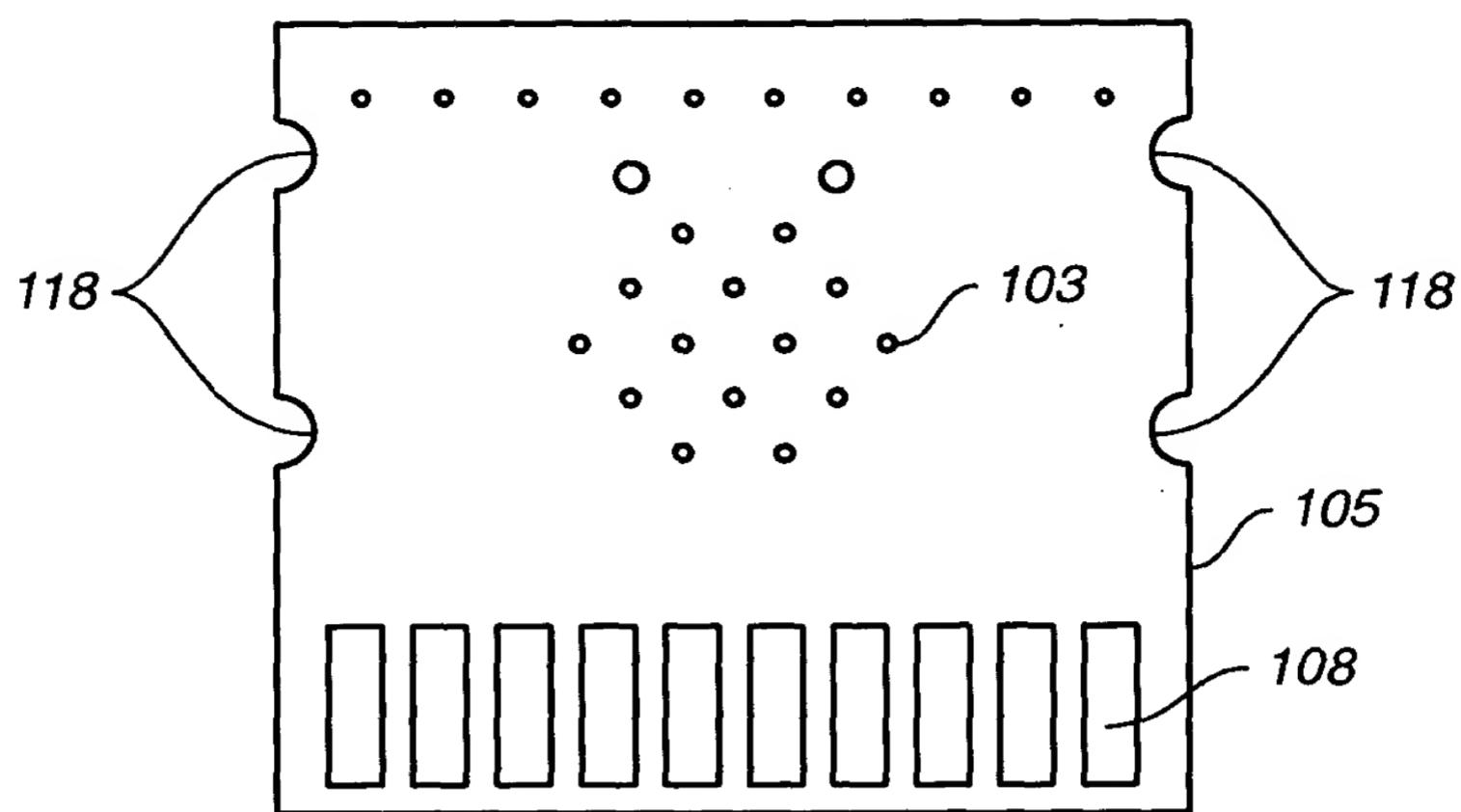
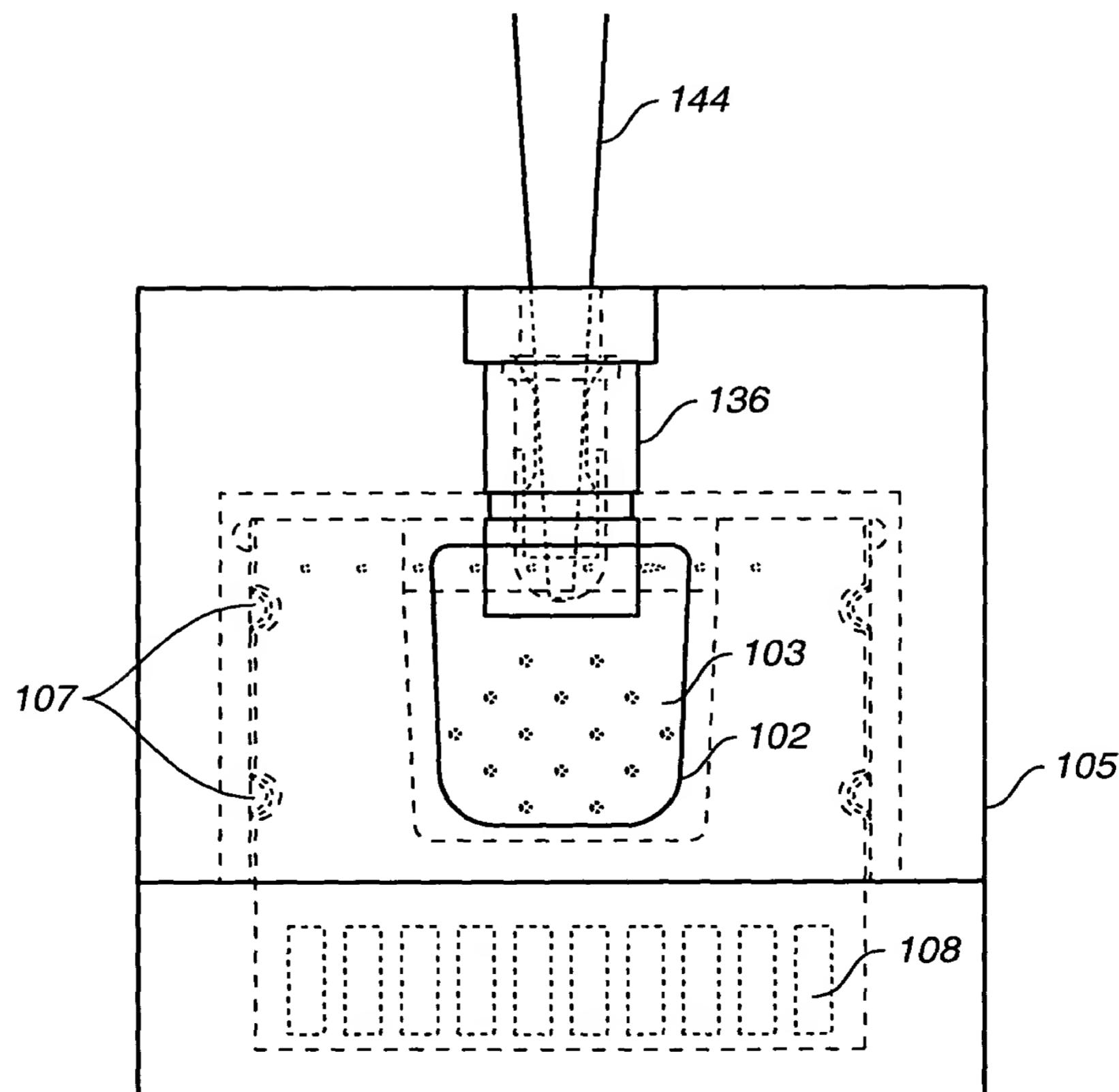


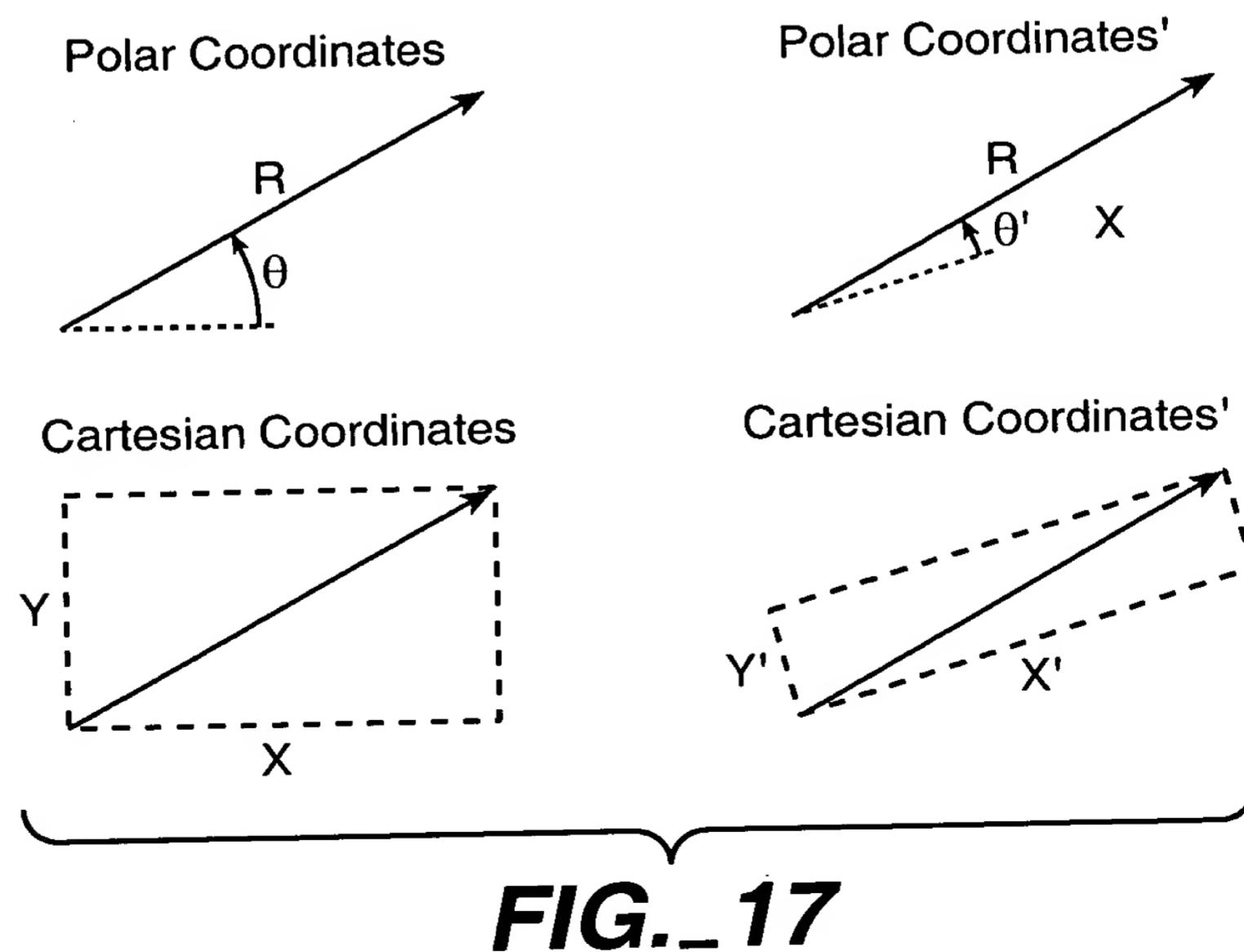
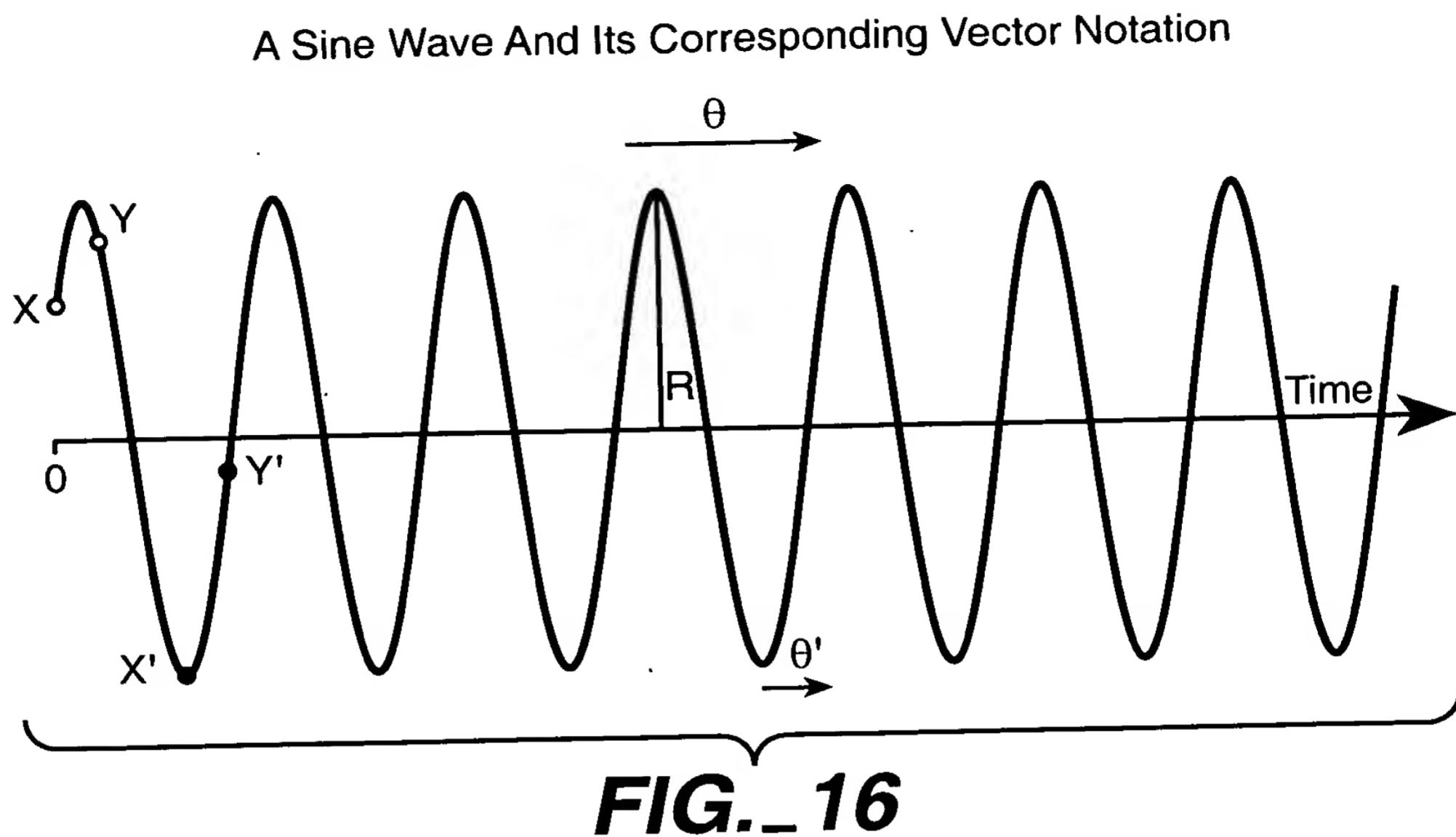
FIG. 15A

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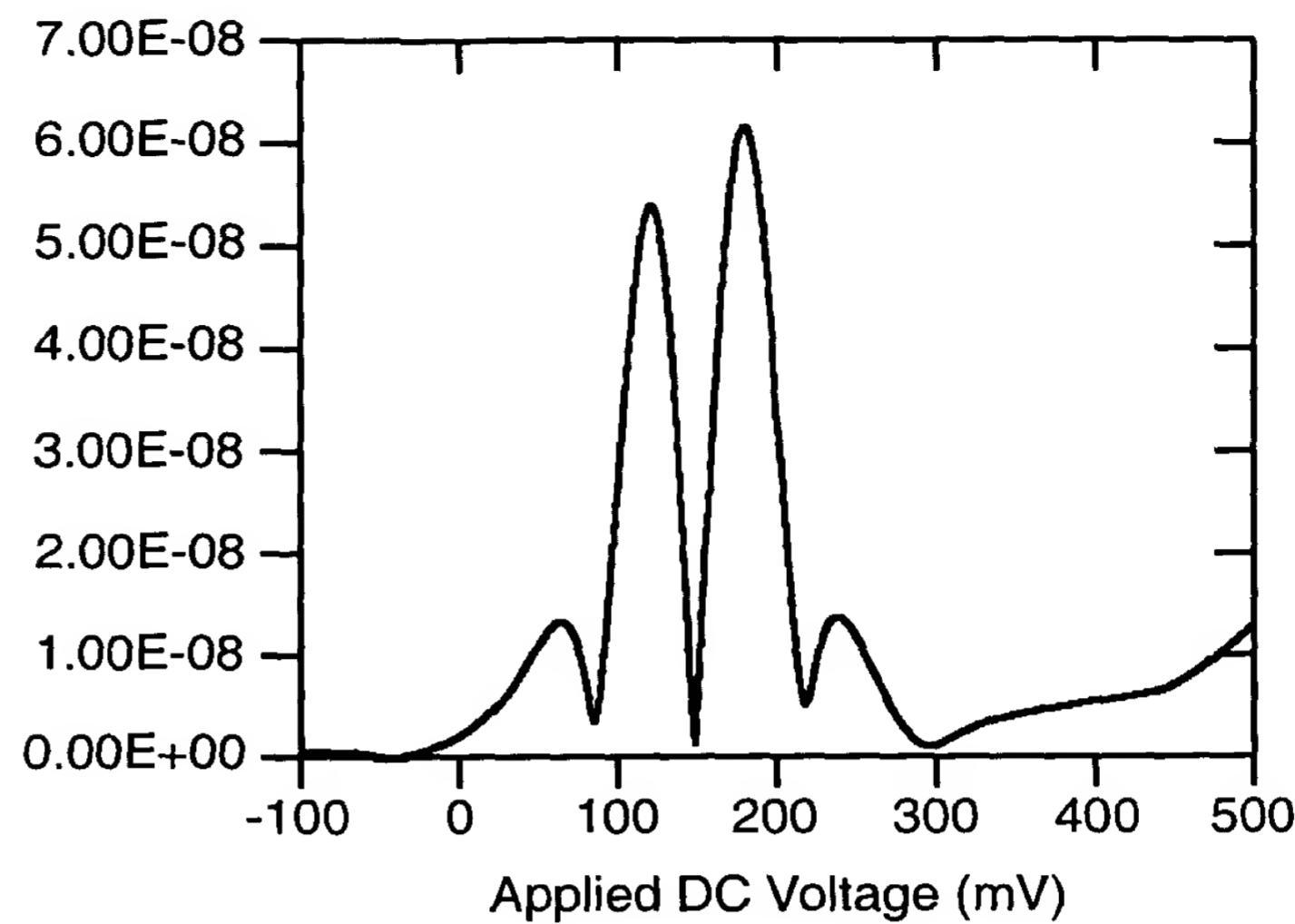
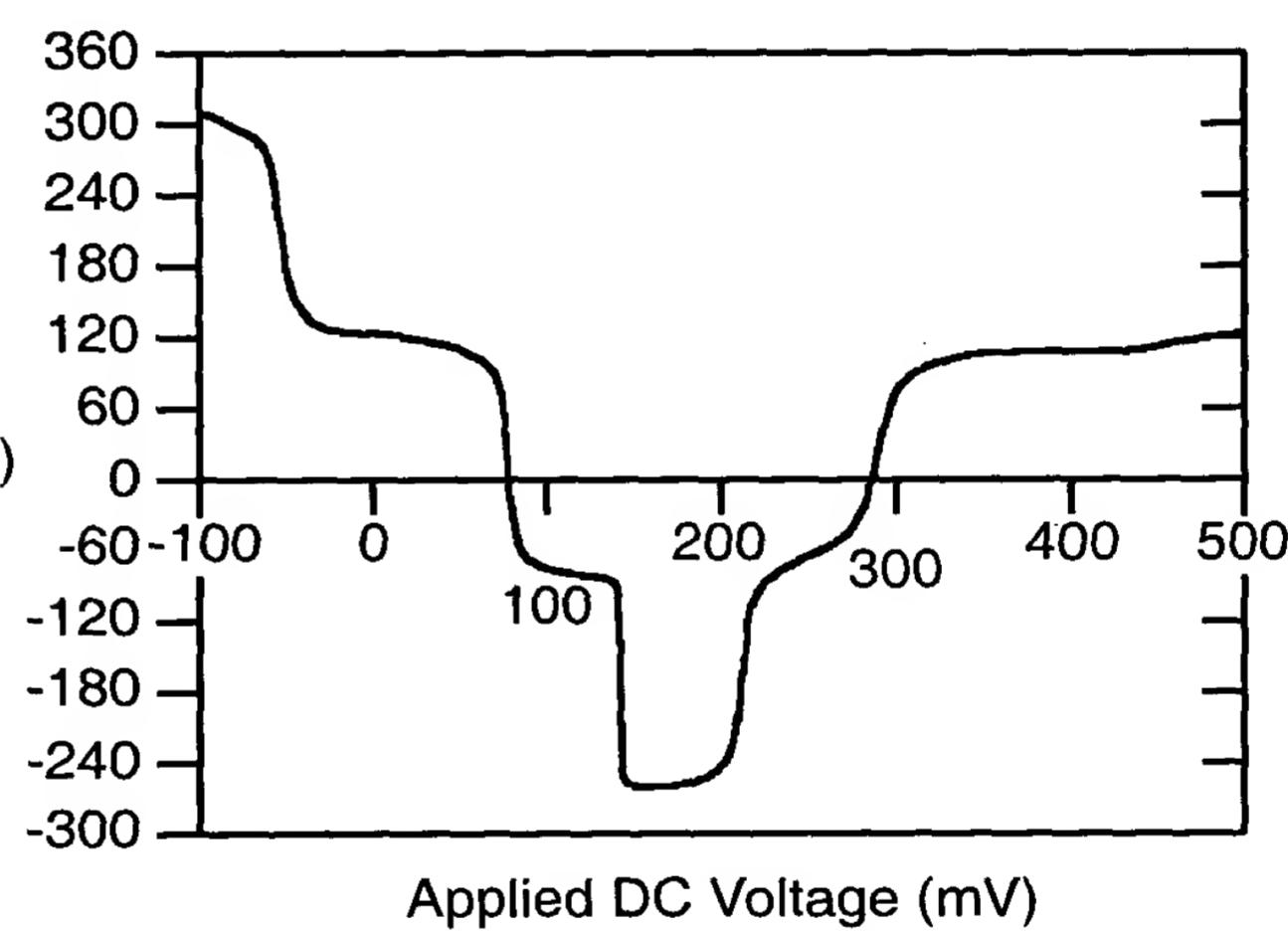
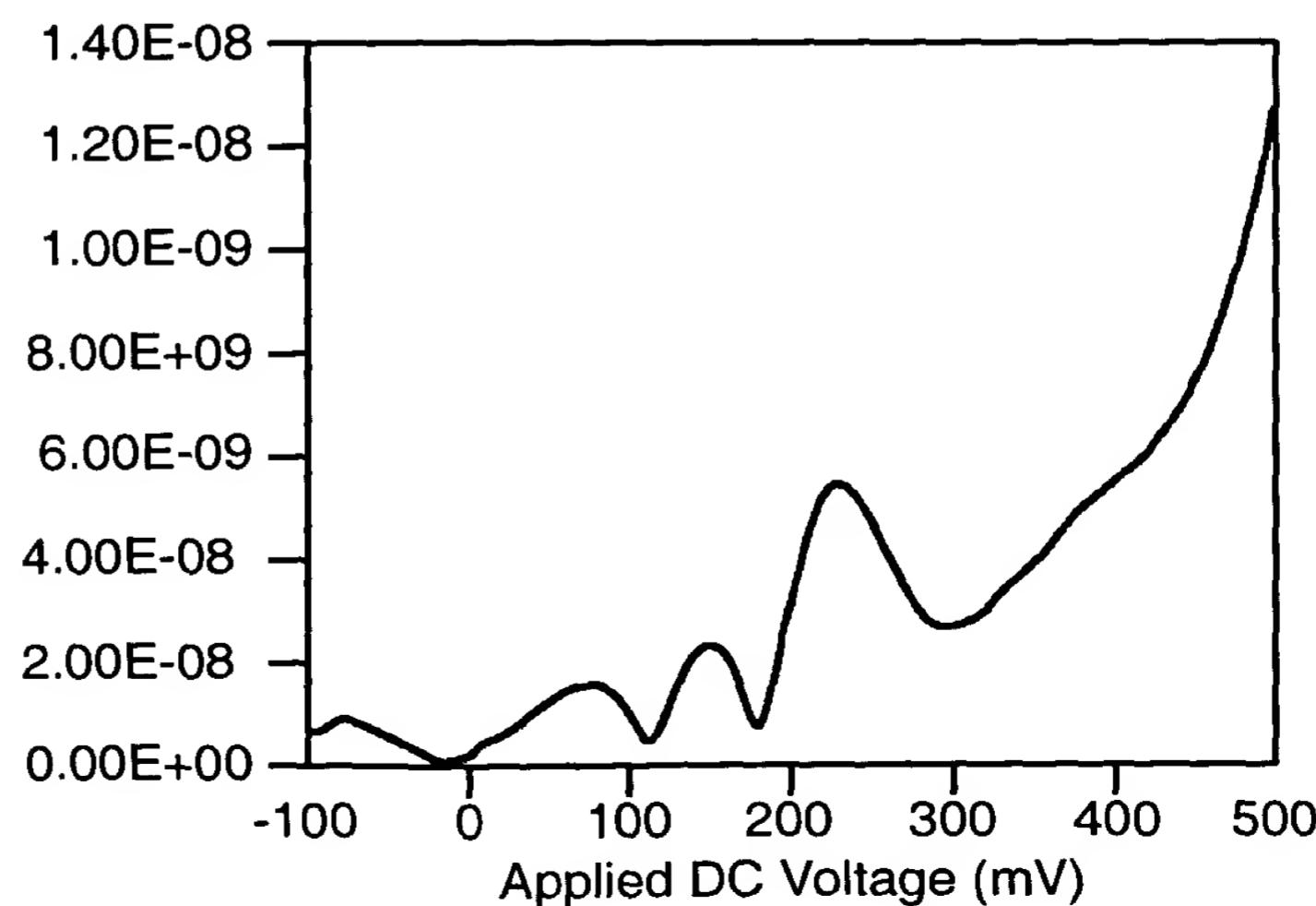
**FIG. 15B****FIG. 15C**

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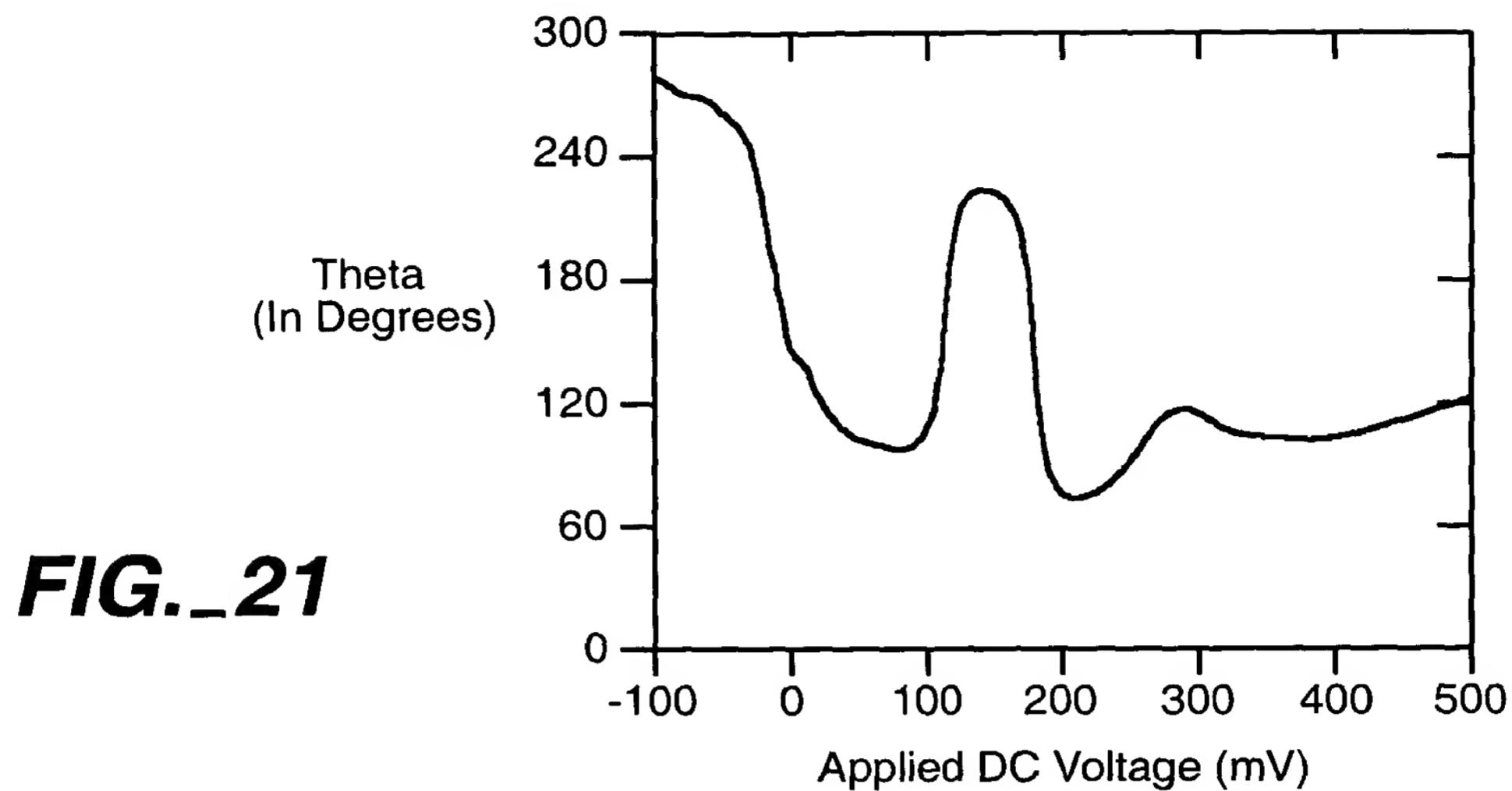
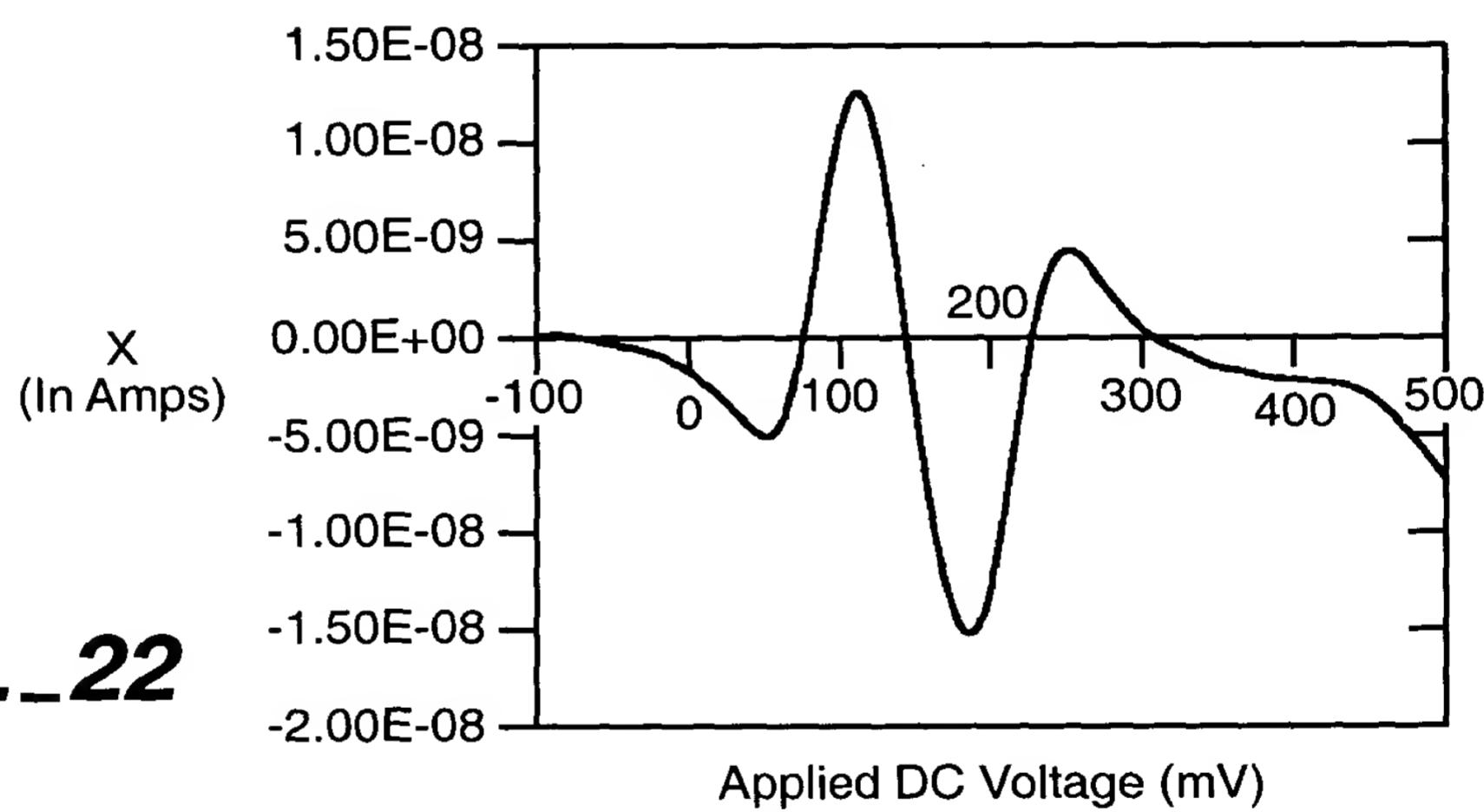
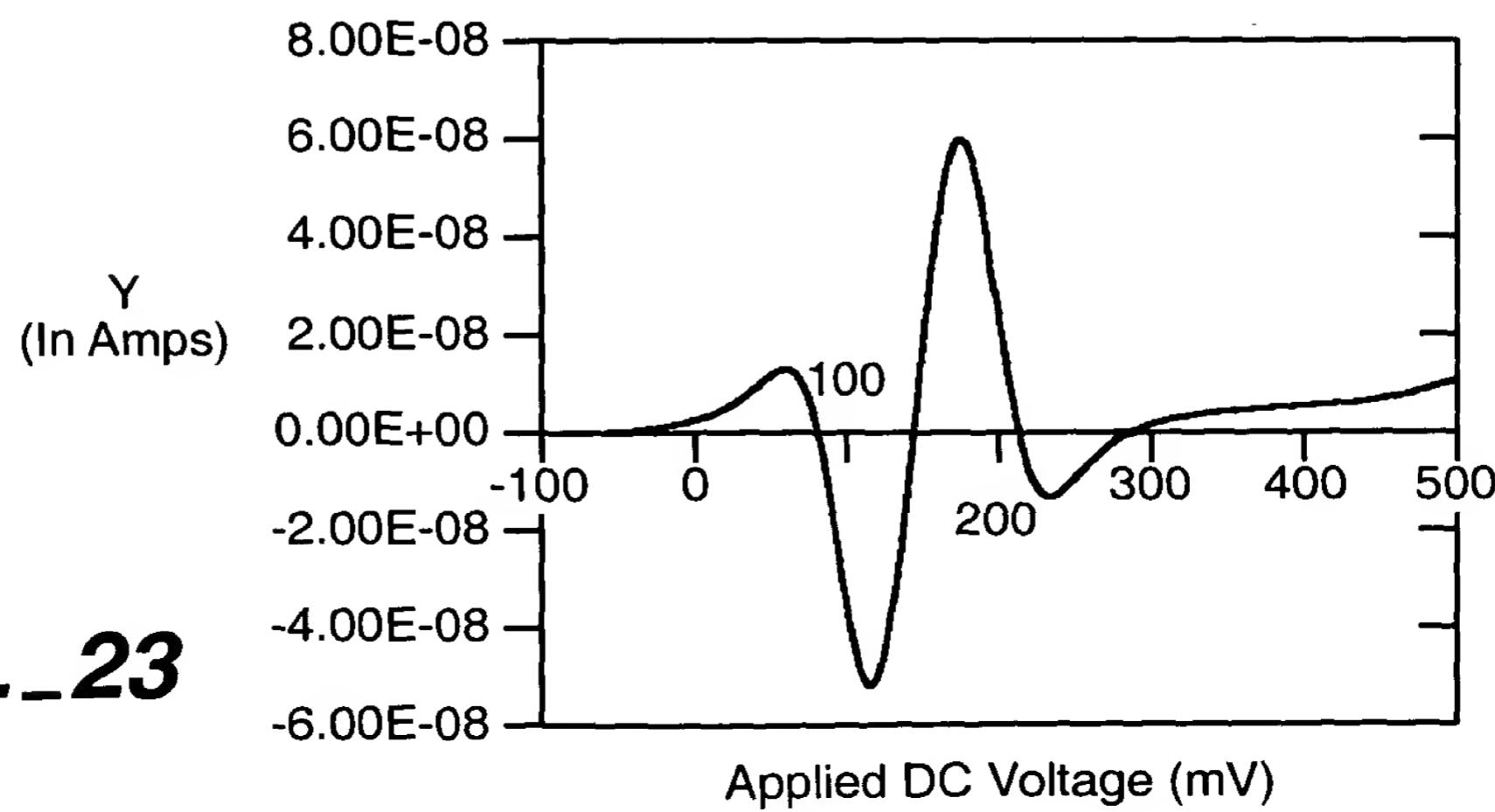
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R
(In Amps)**FIG._18**Theta
(In Degrees)**FIG._19**R
(In Amps)**FIG._20**

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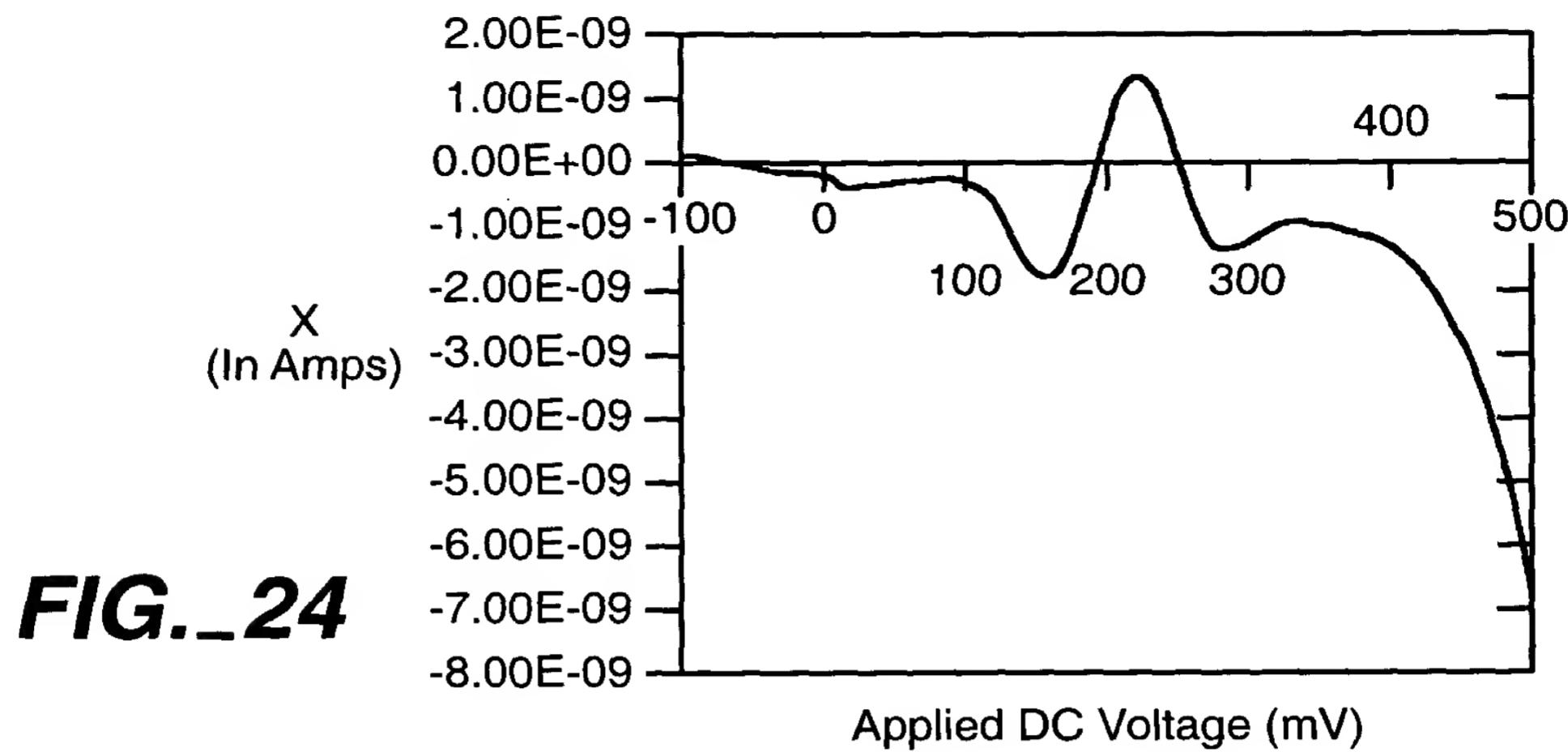
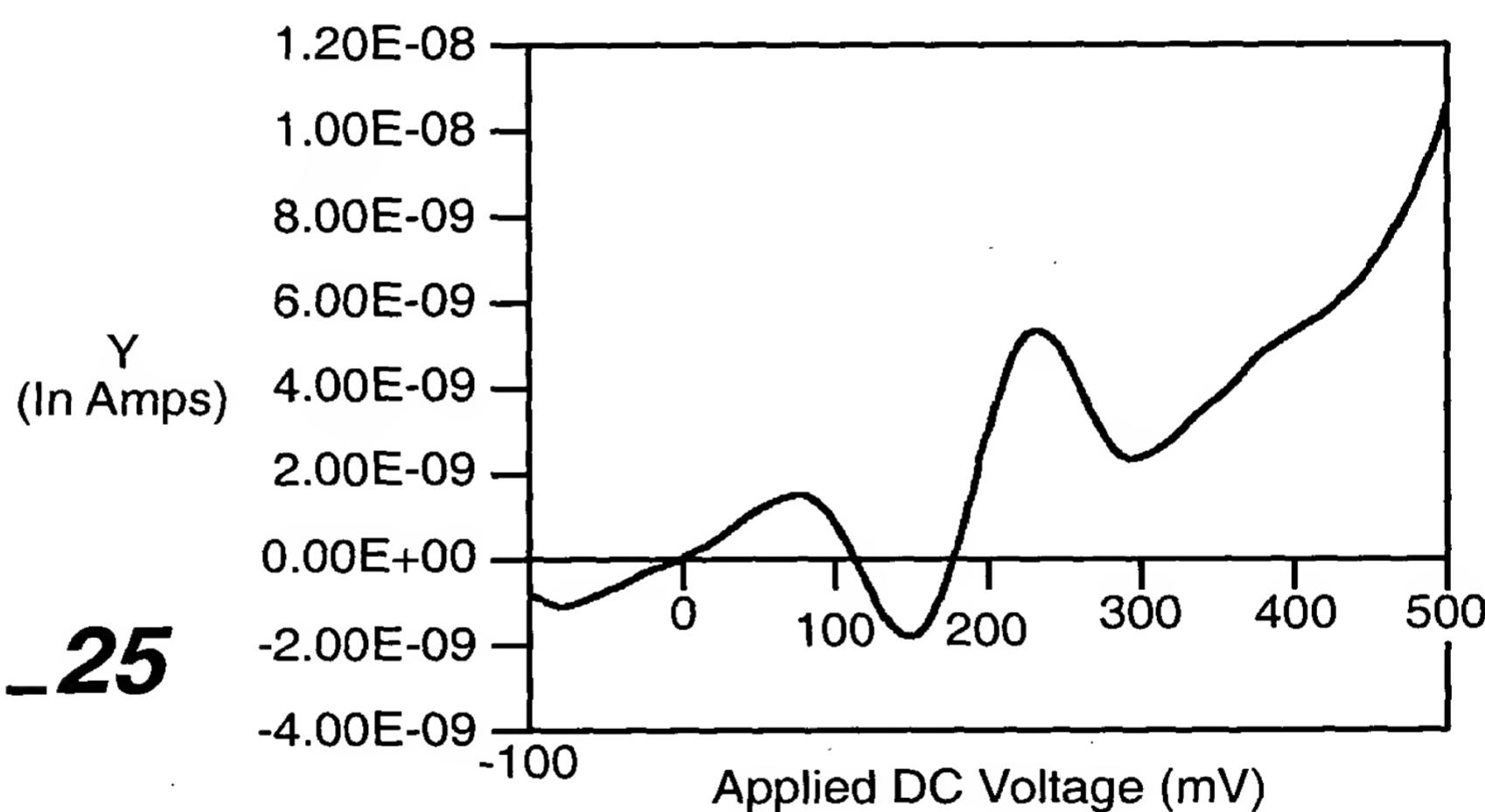
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**FIG._21****FIG._22****FIG._23**

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**FIG. 24****FIG. 25**

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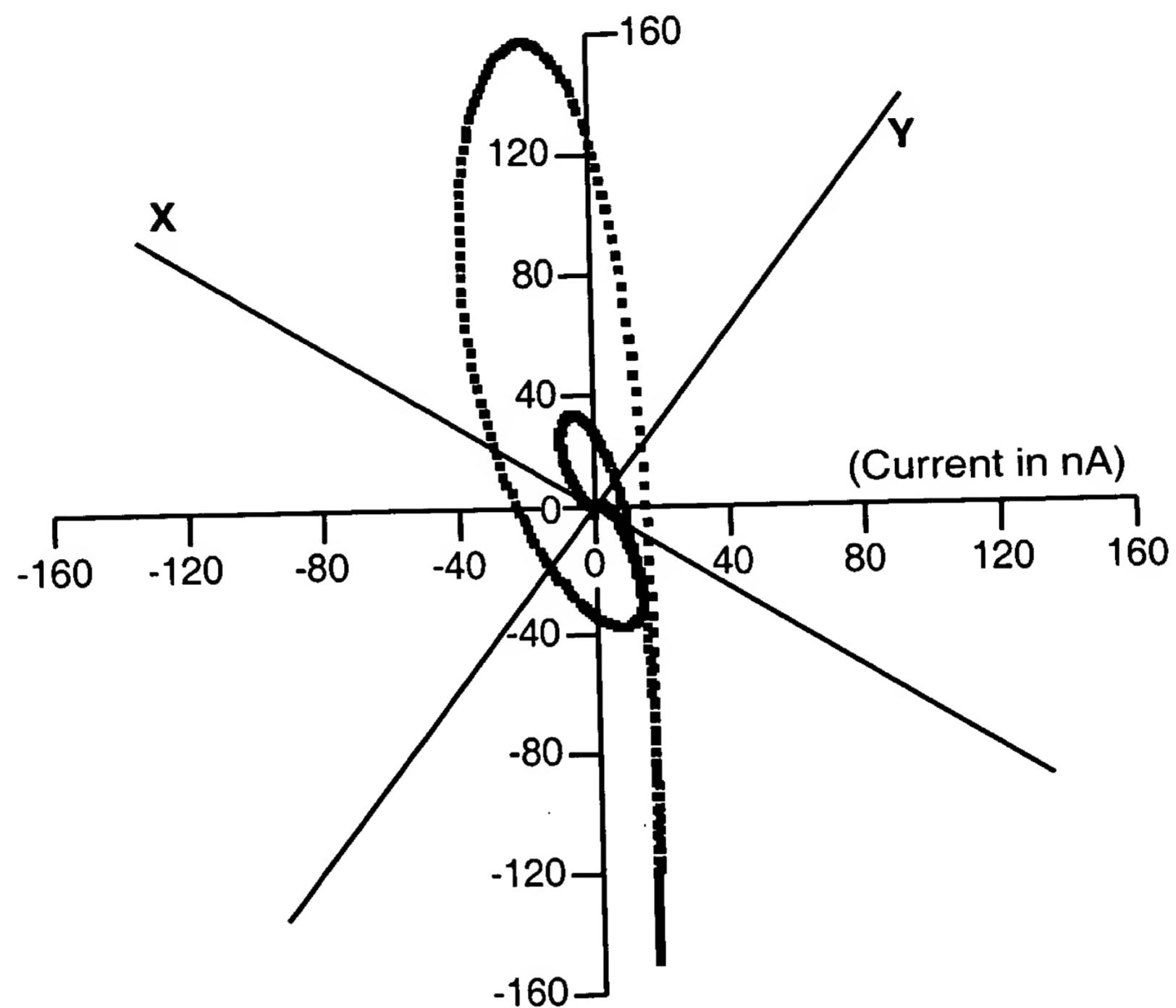


FIG._26

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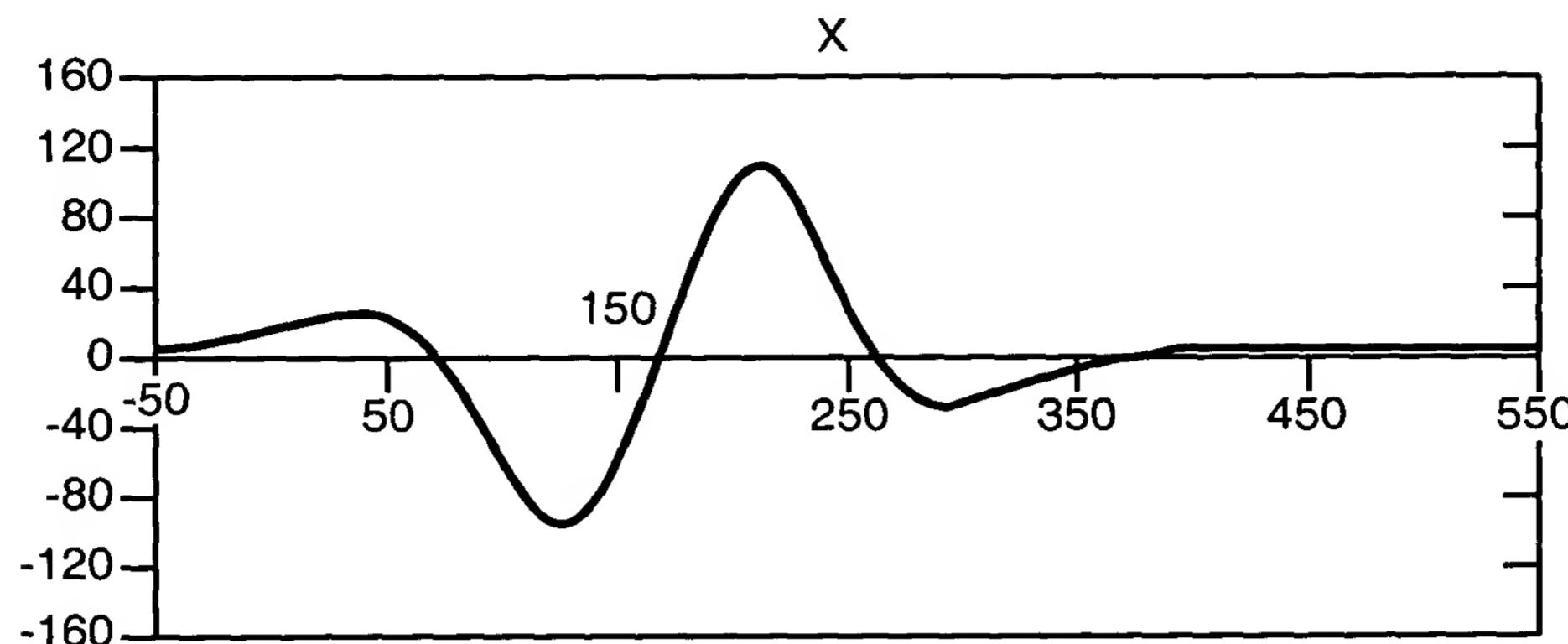


FIG._27

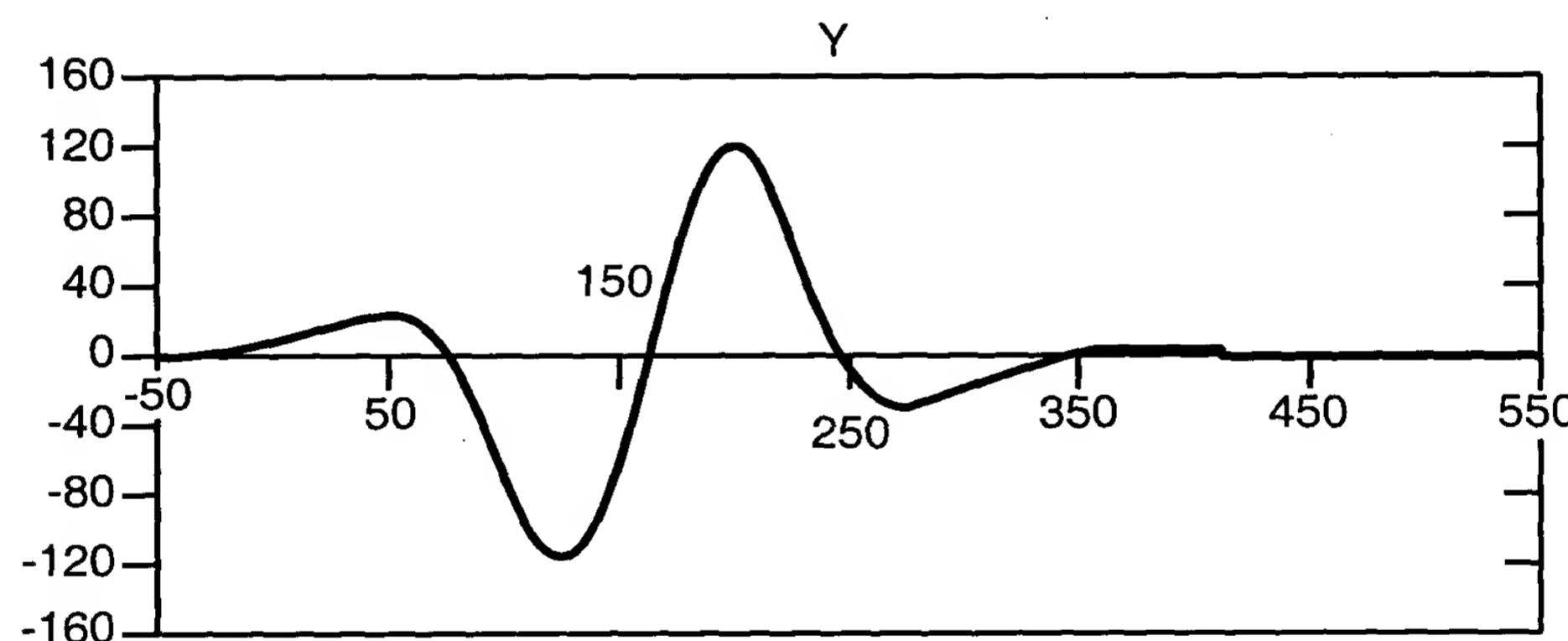


FIG._28

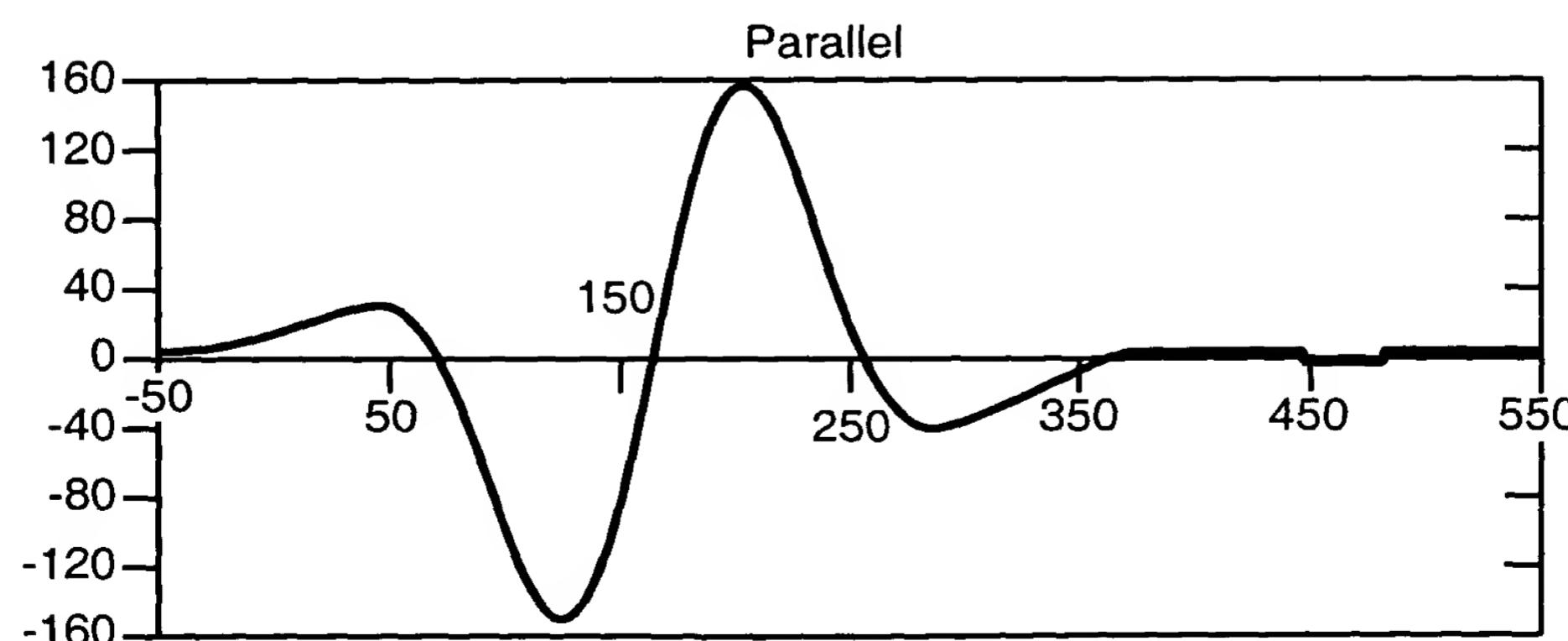
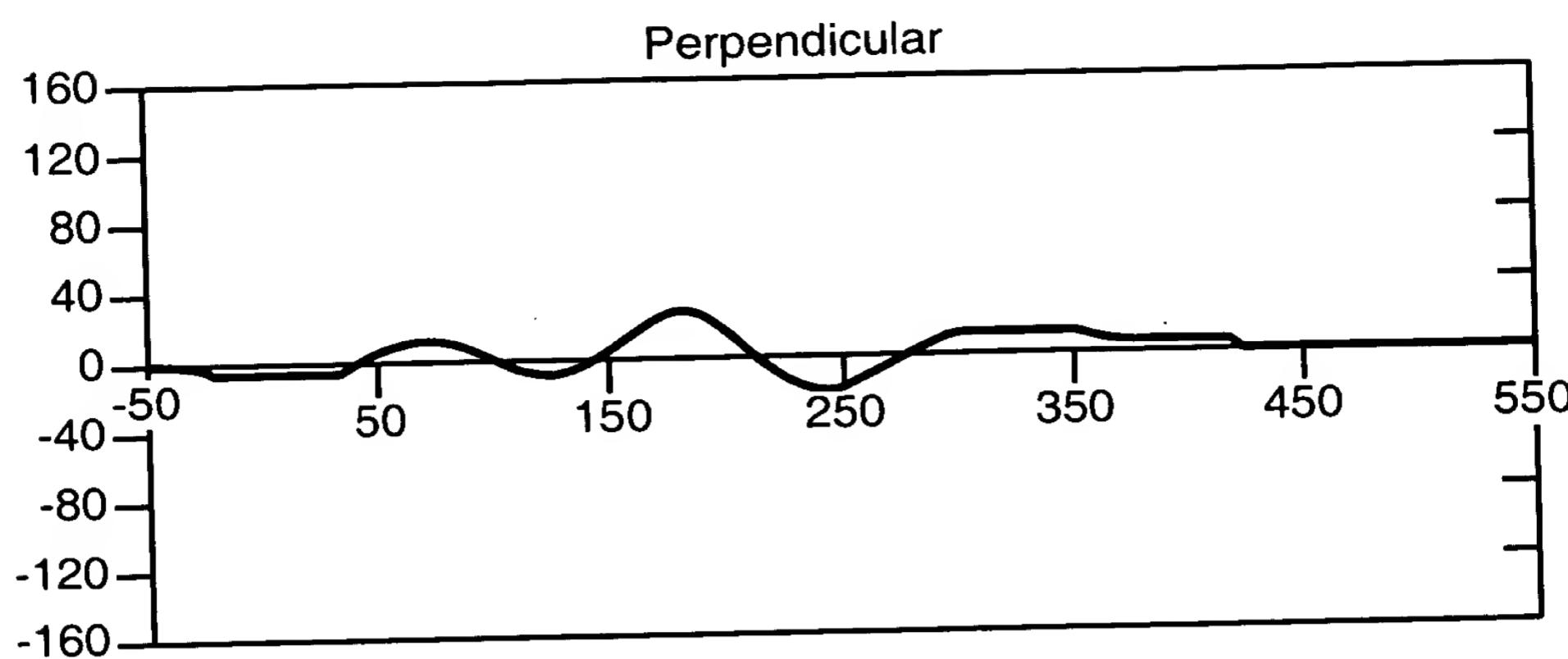
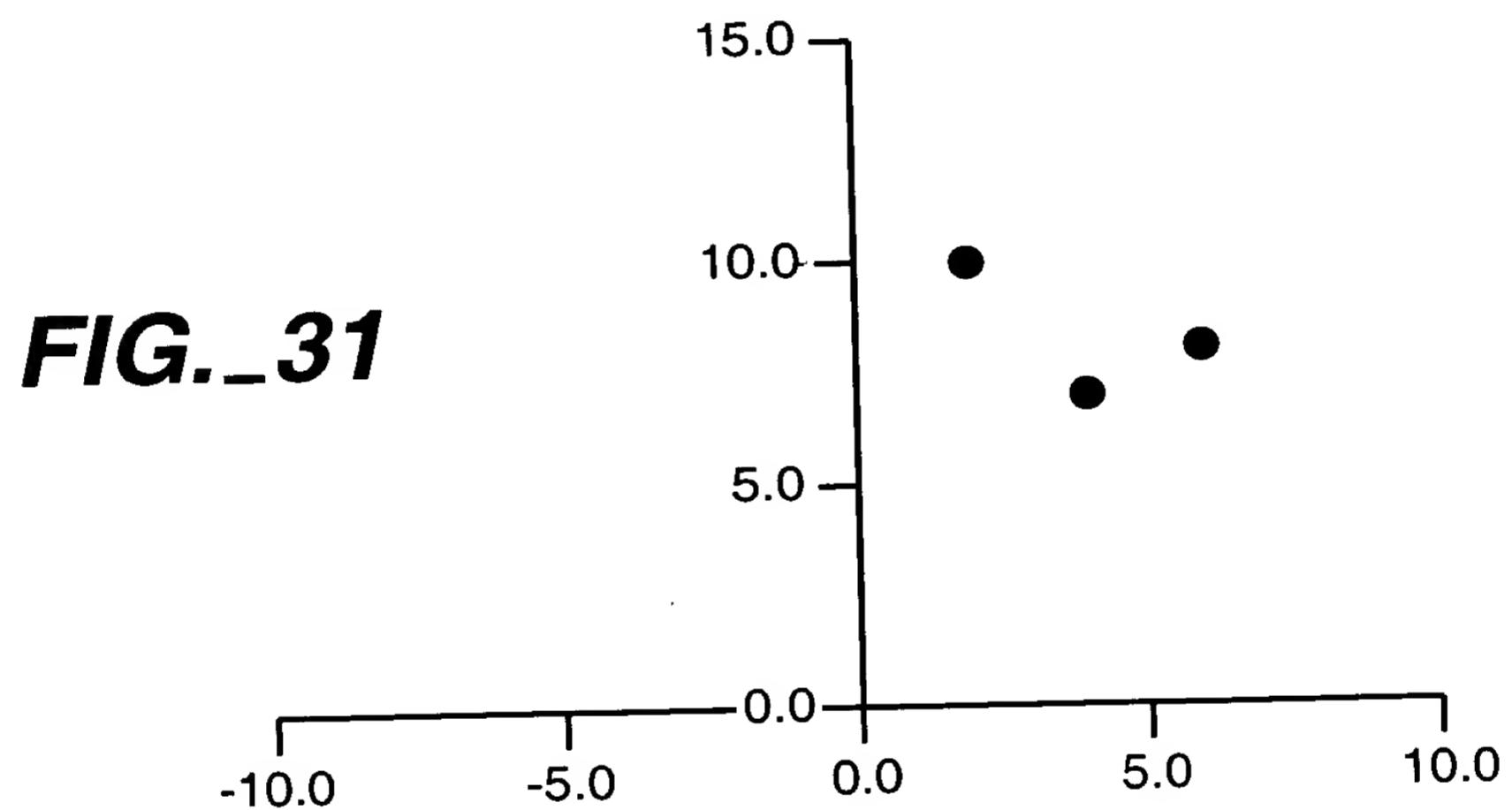
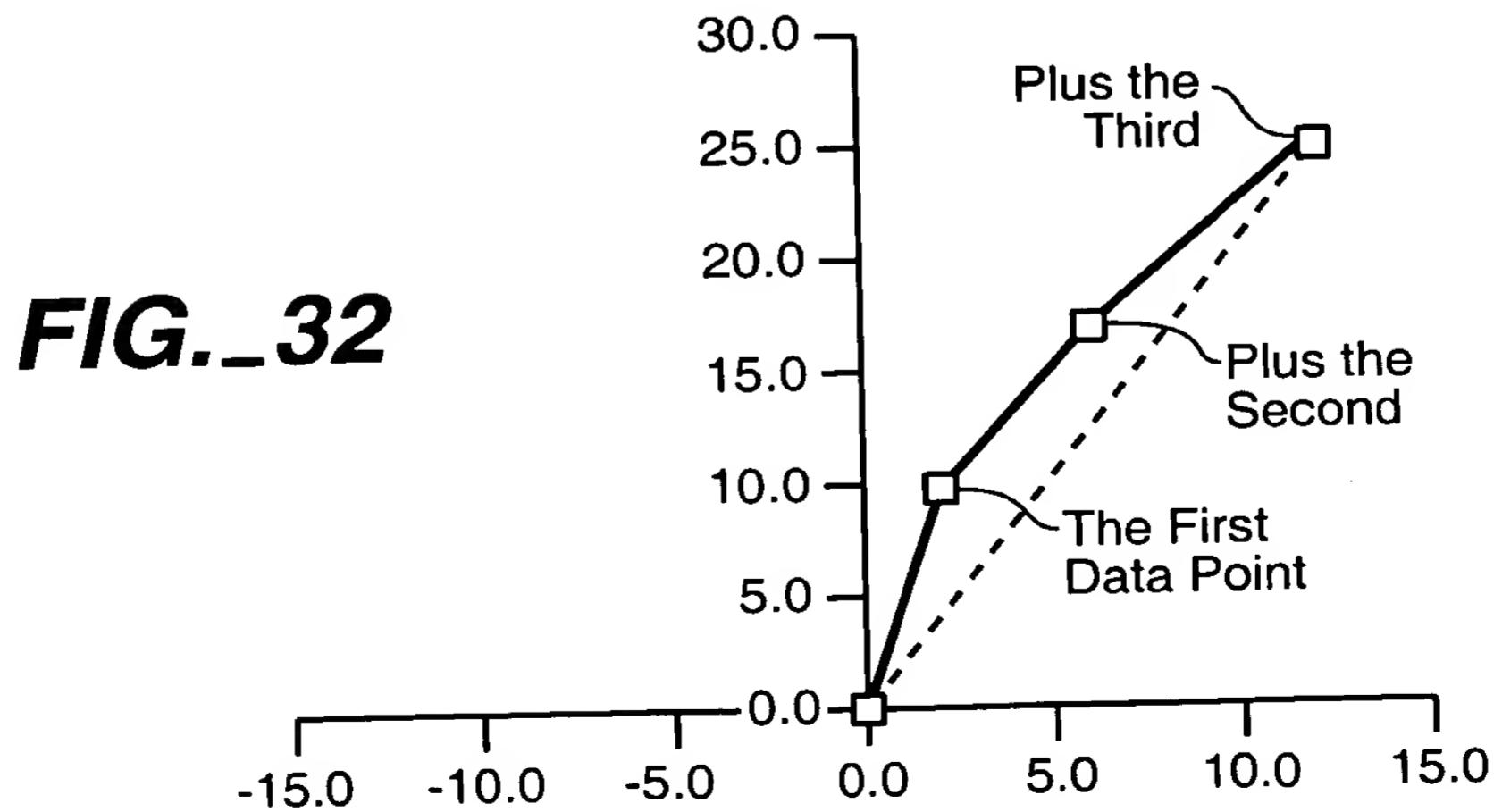


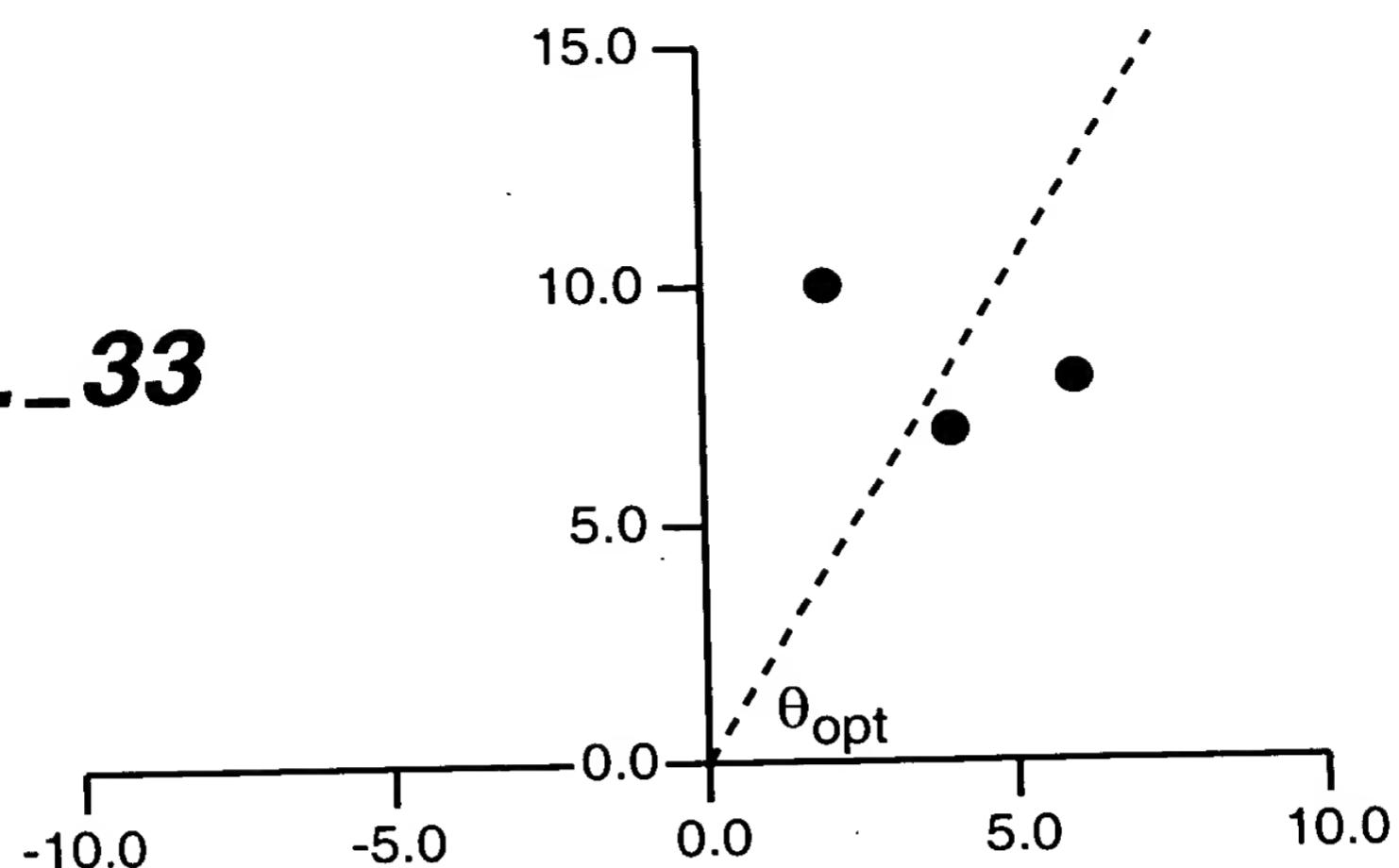
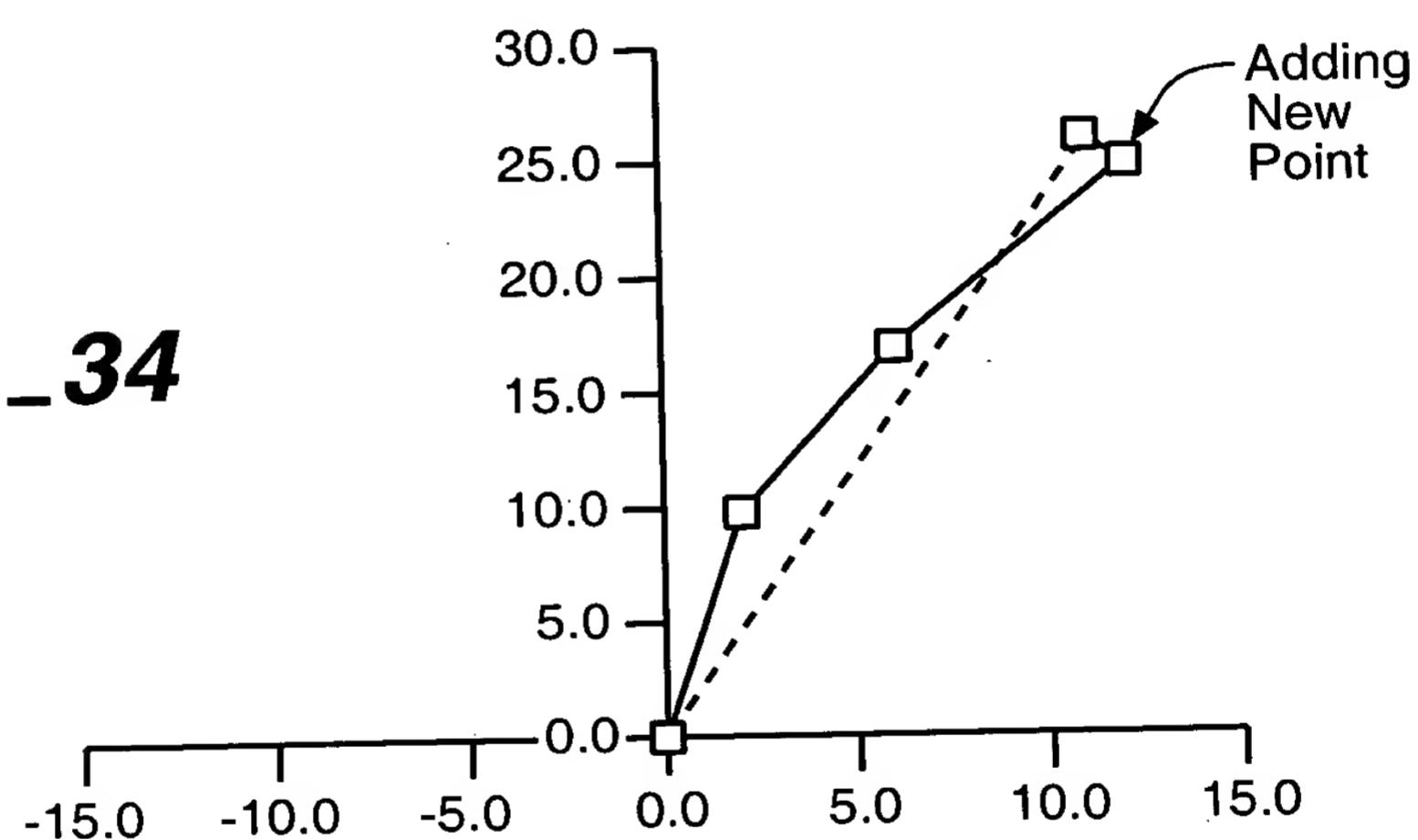
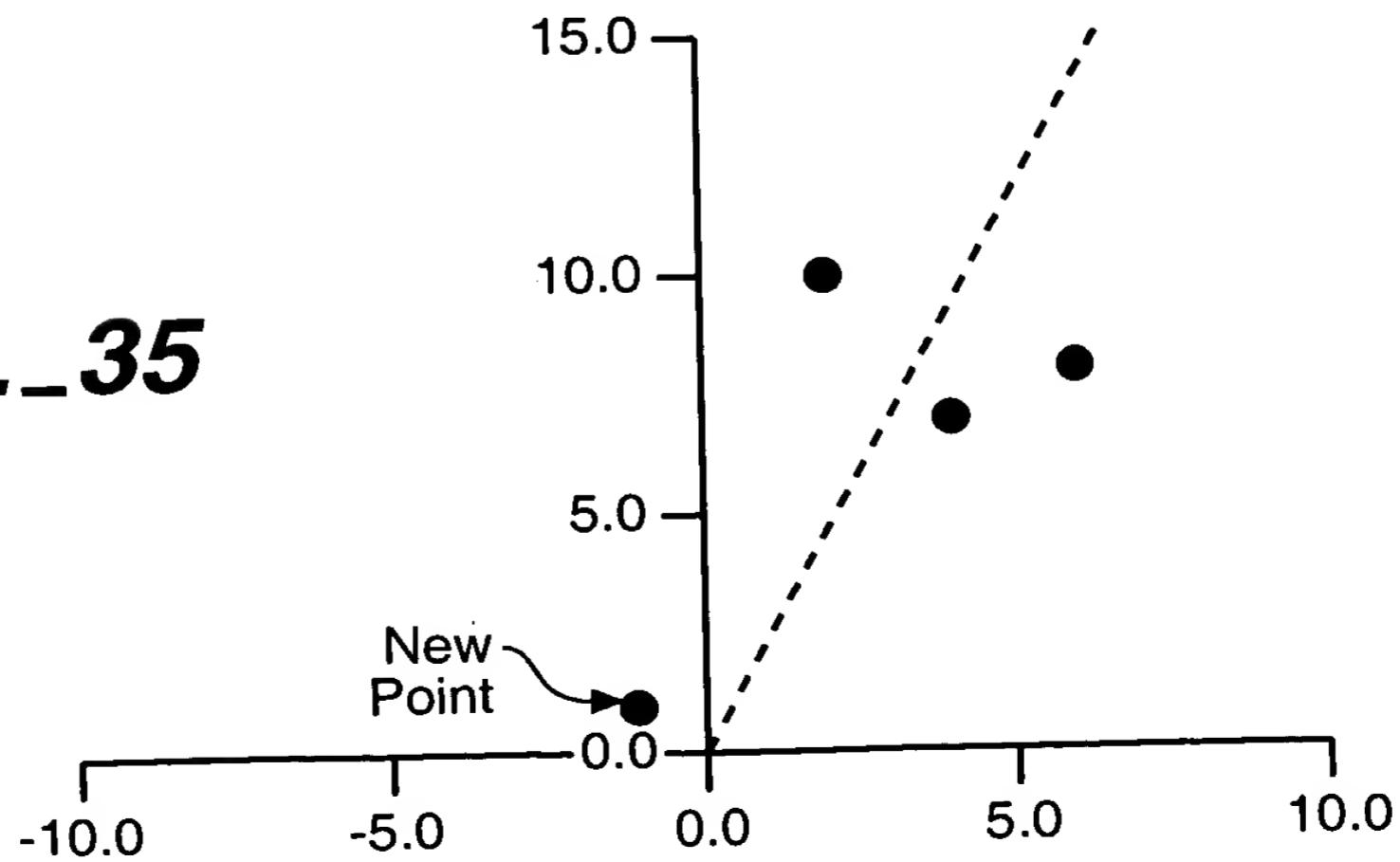
FIG._29

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**FIG._30****FIG._31****FIG._32**

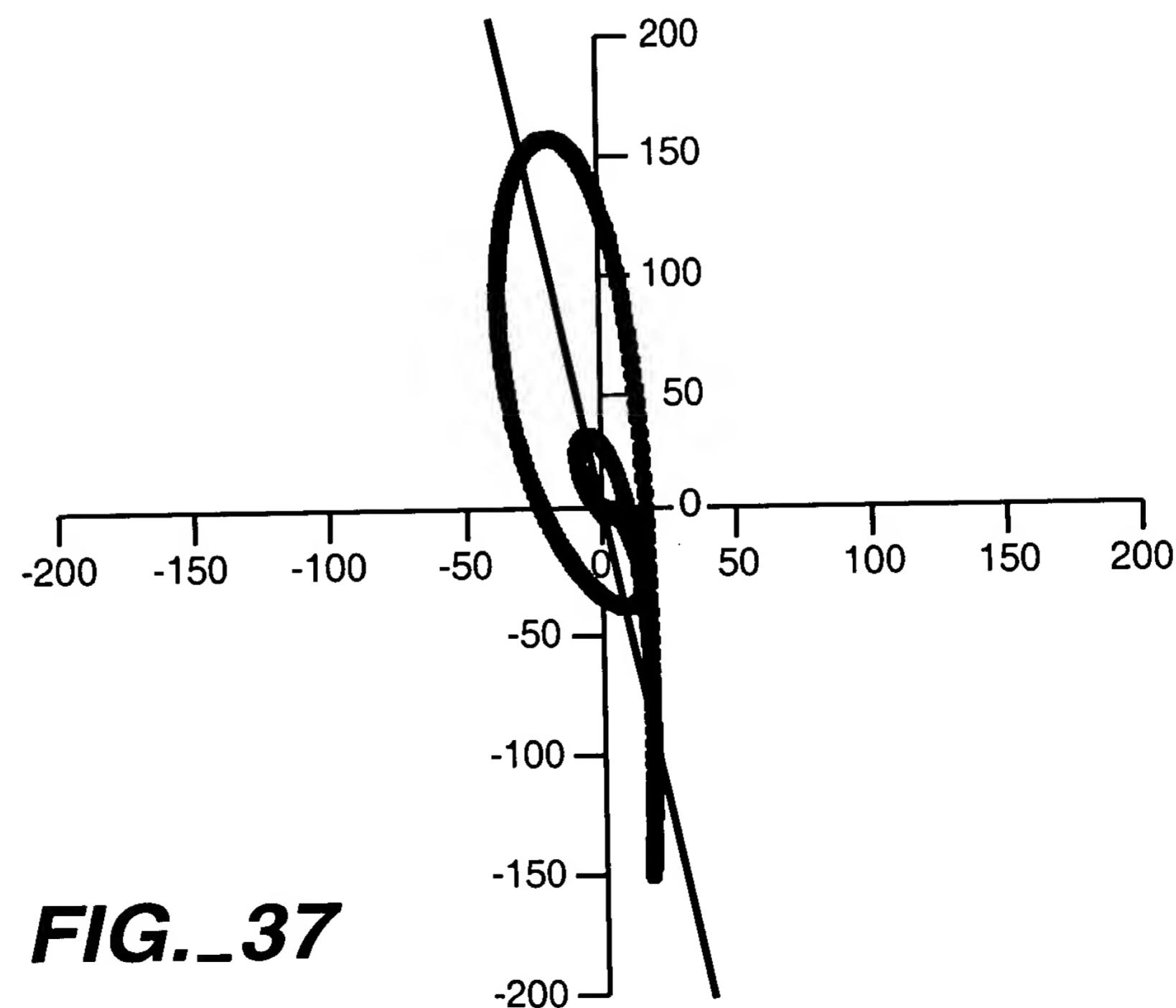
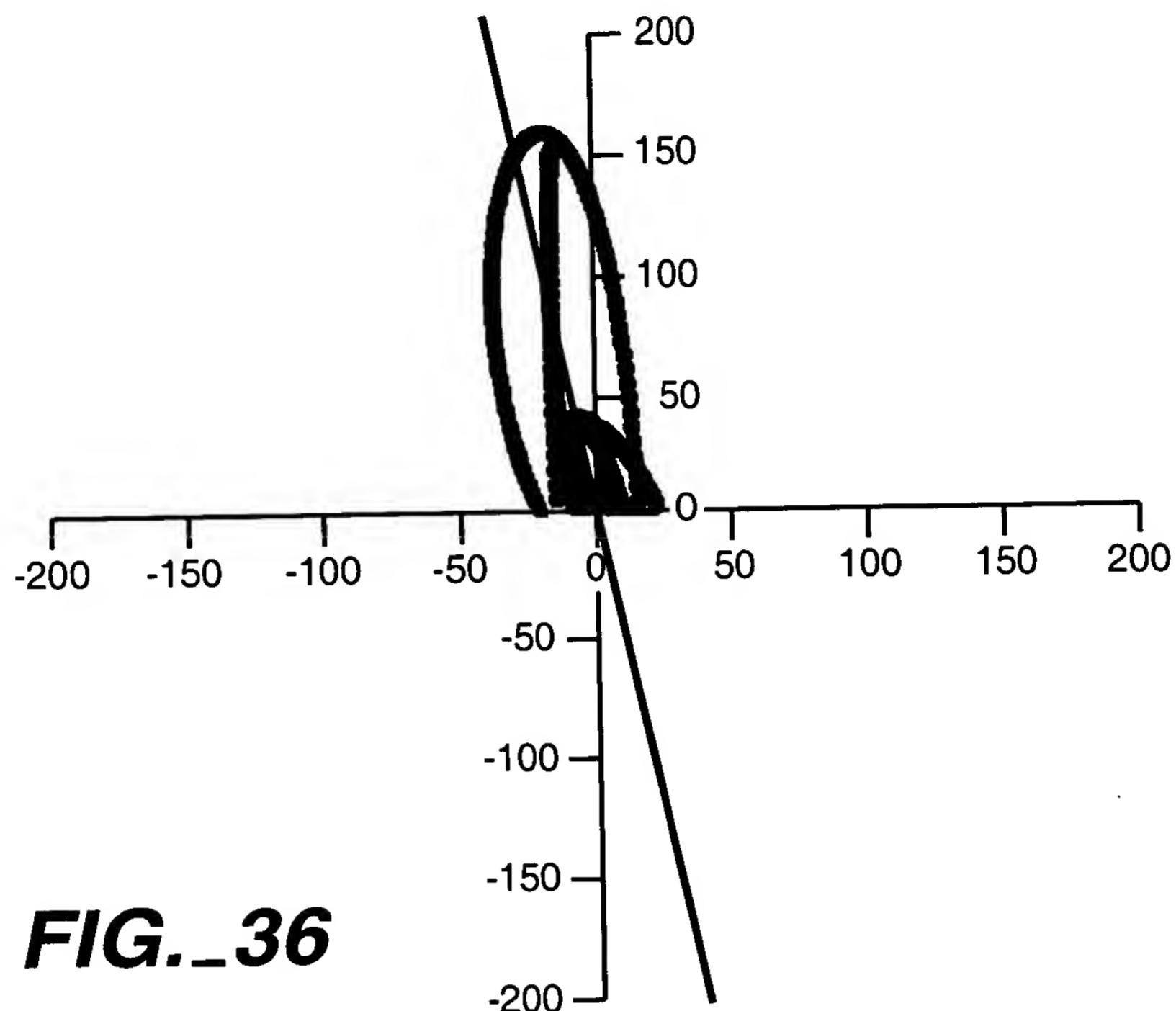
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FIG._33**FIG._34****FIG._35**

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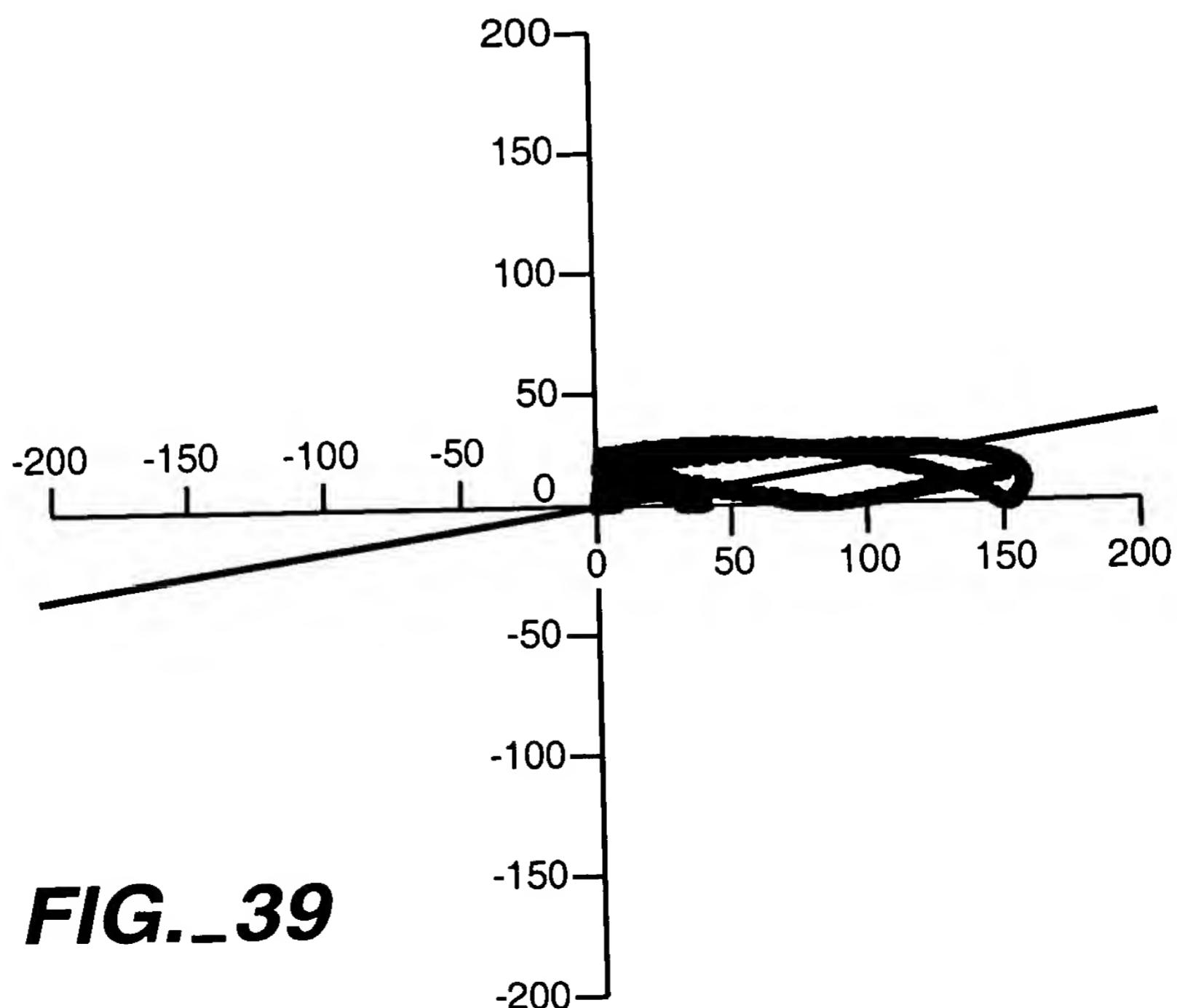
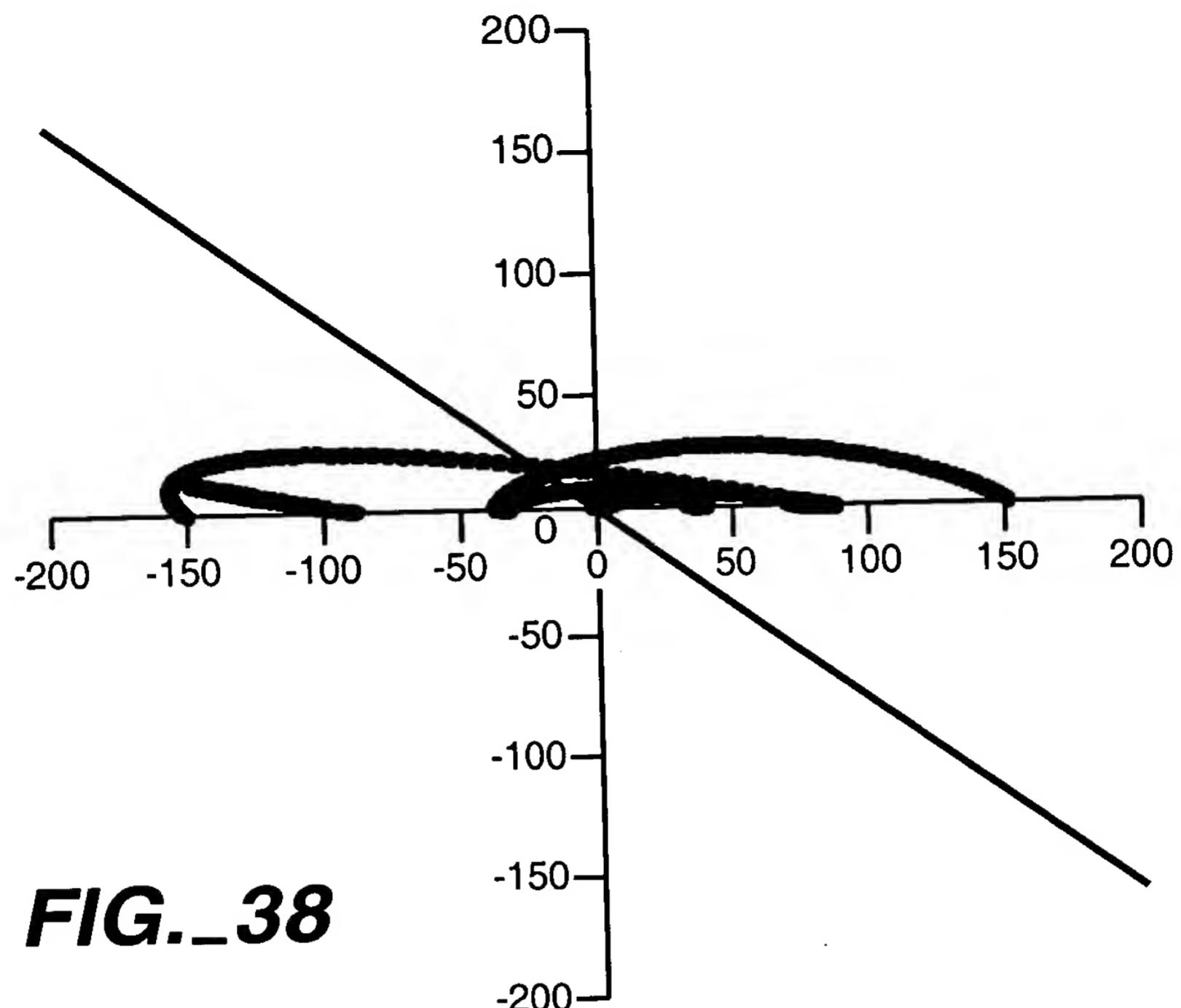
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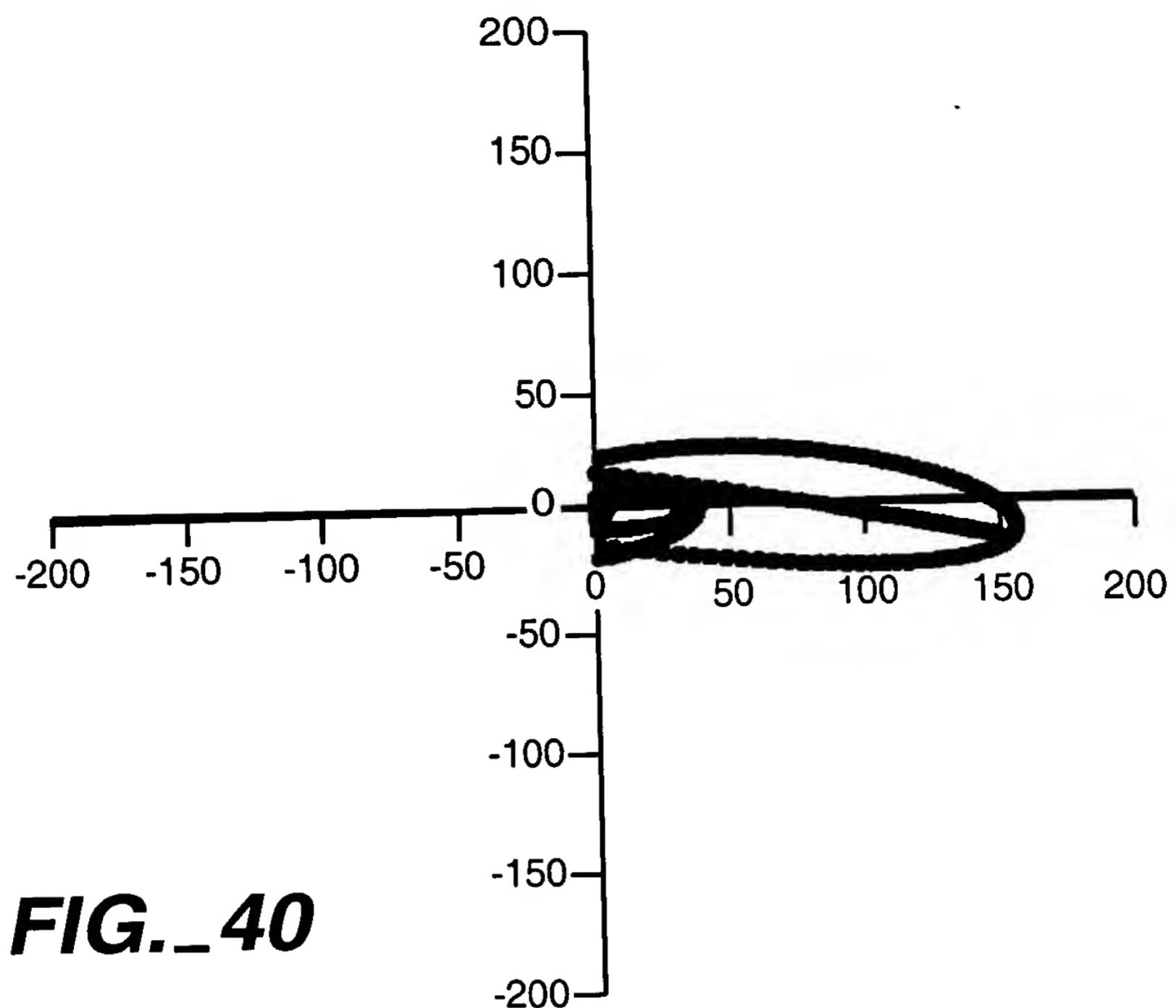


FIG._40

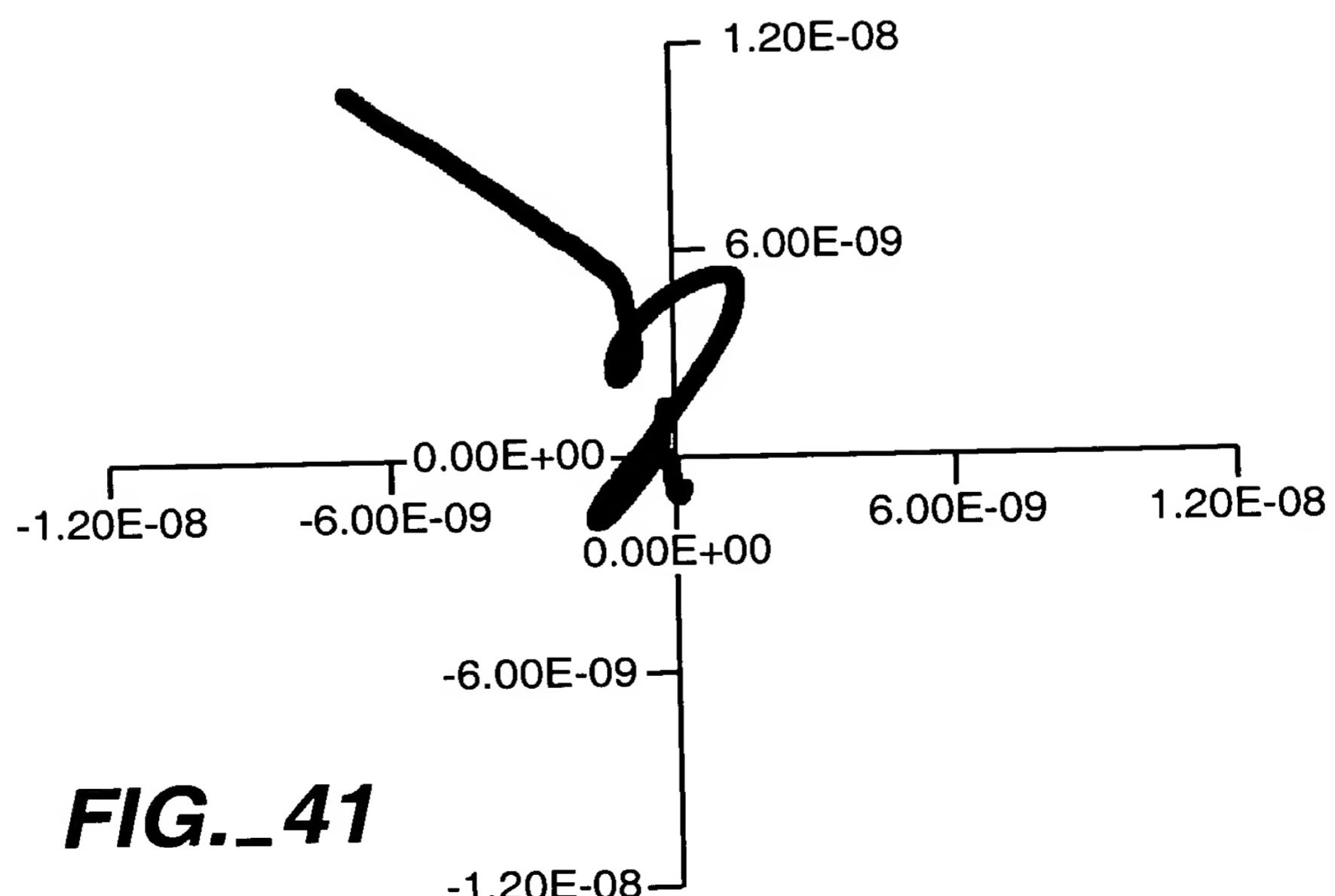
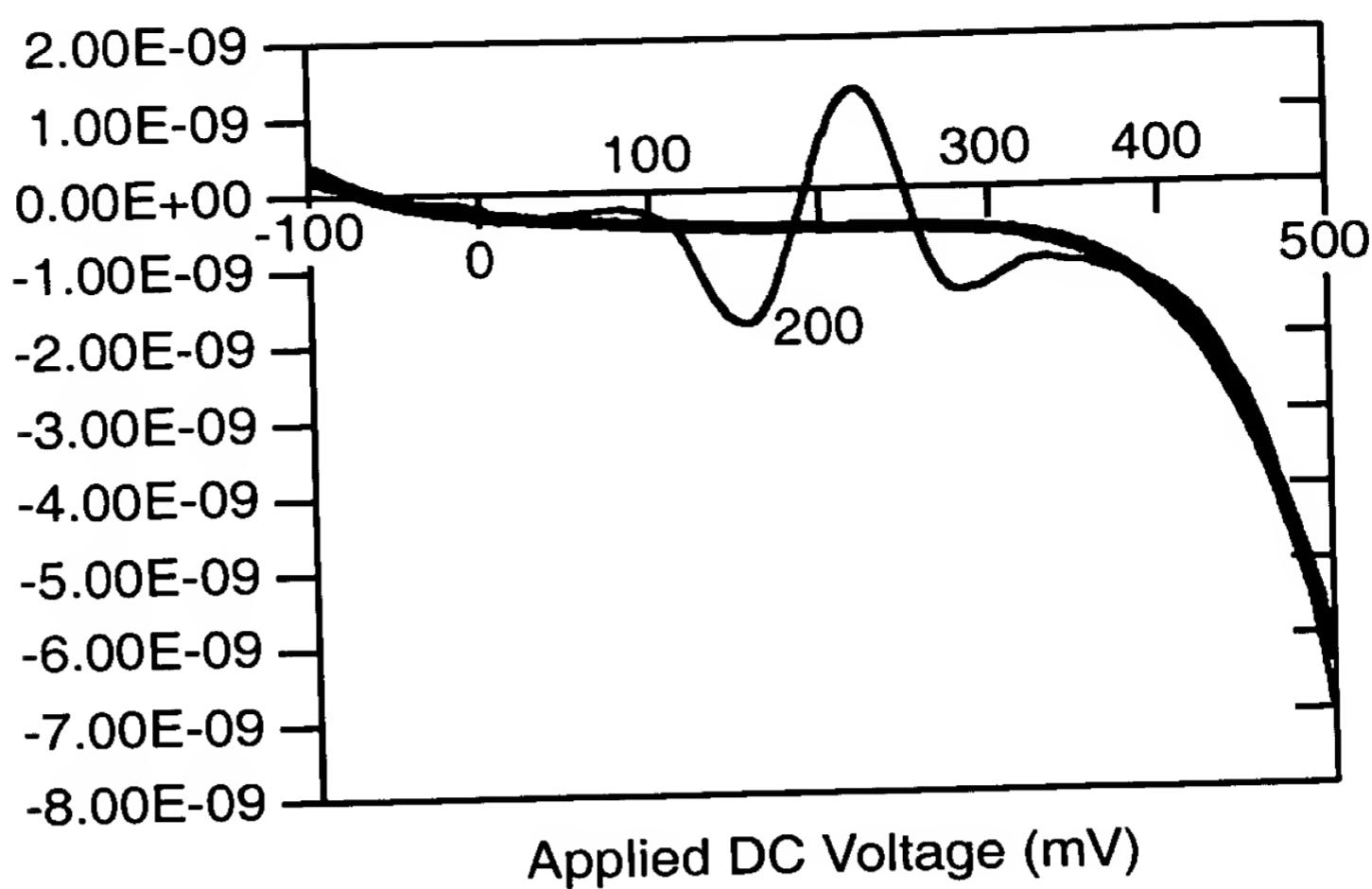
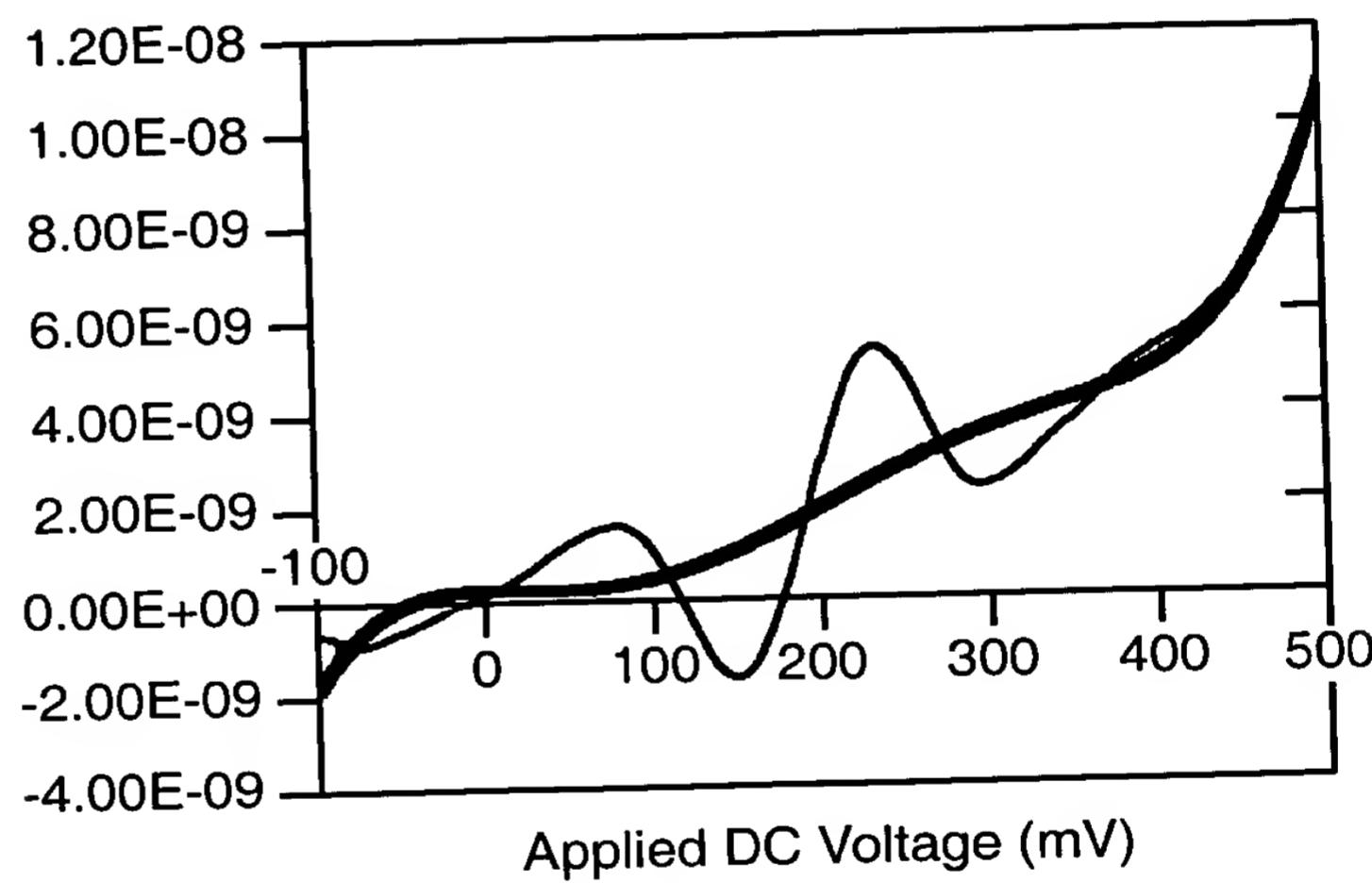
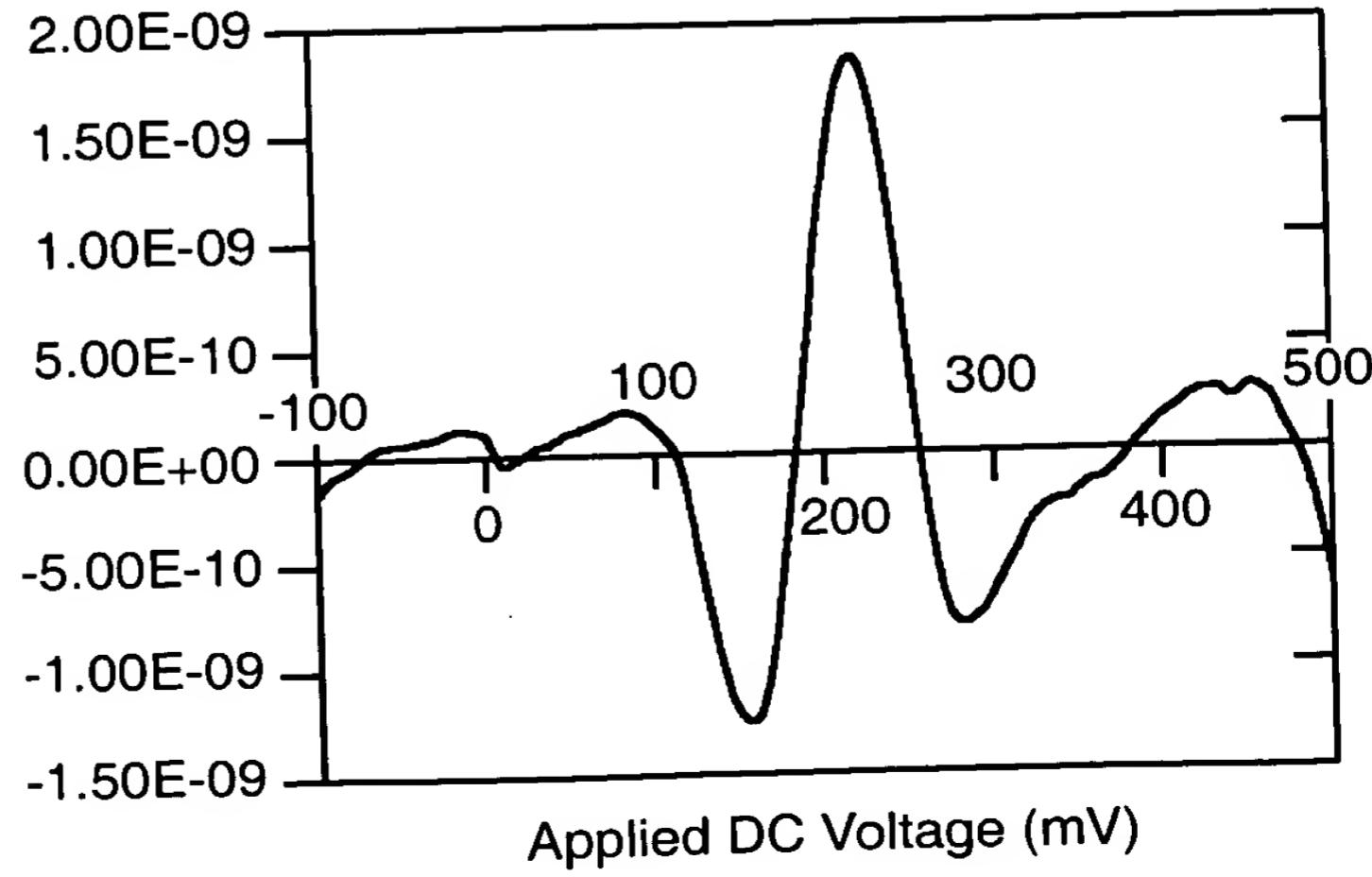


FIG._41

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Scan Viewed
Along
0 Degrees**FIG. 42**Scan Viewed
Along
0 Degrees**FIG. 43**0 Deg. -
5th Order
Polynomial**FIG. 44**

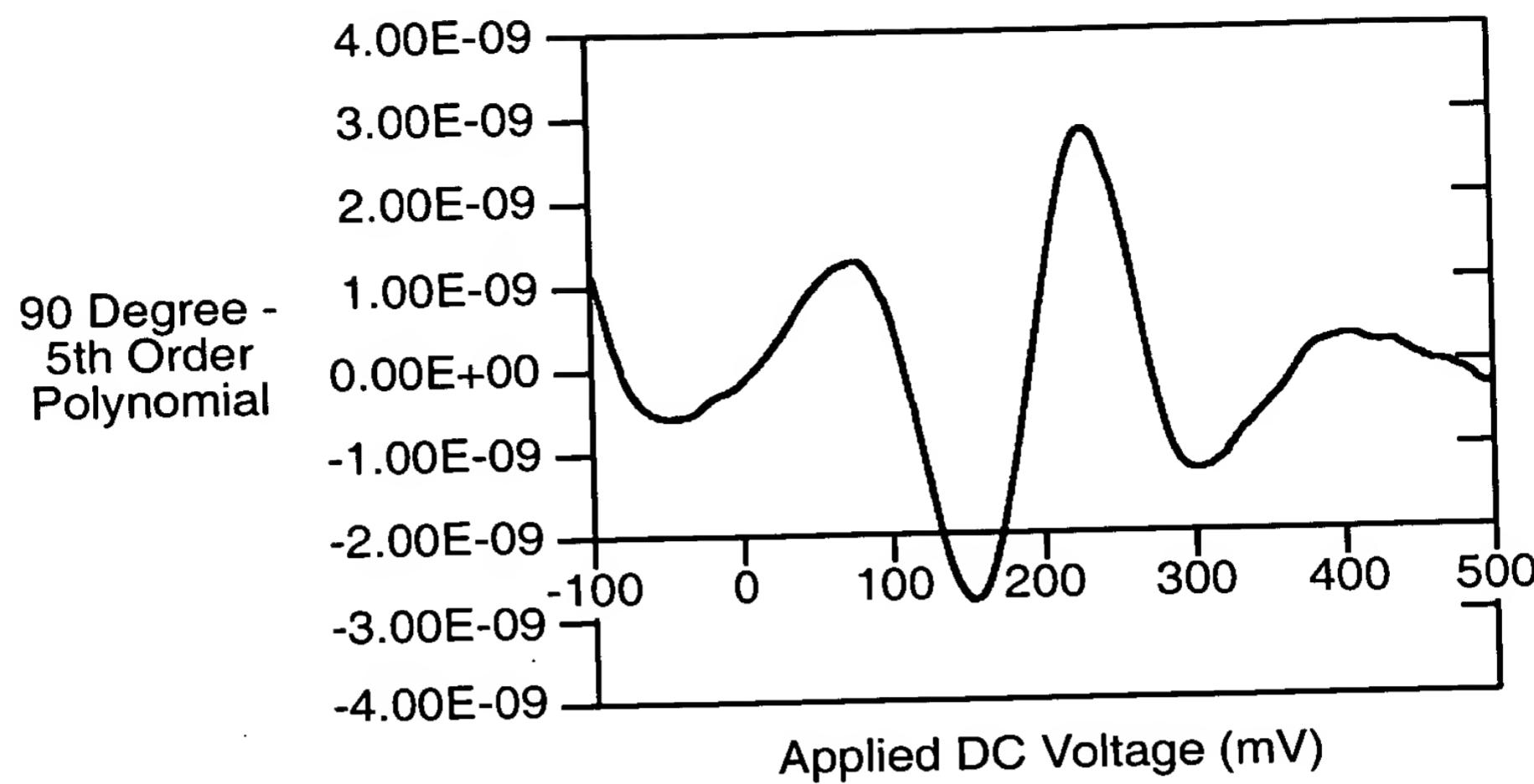


FIG._45

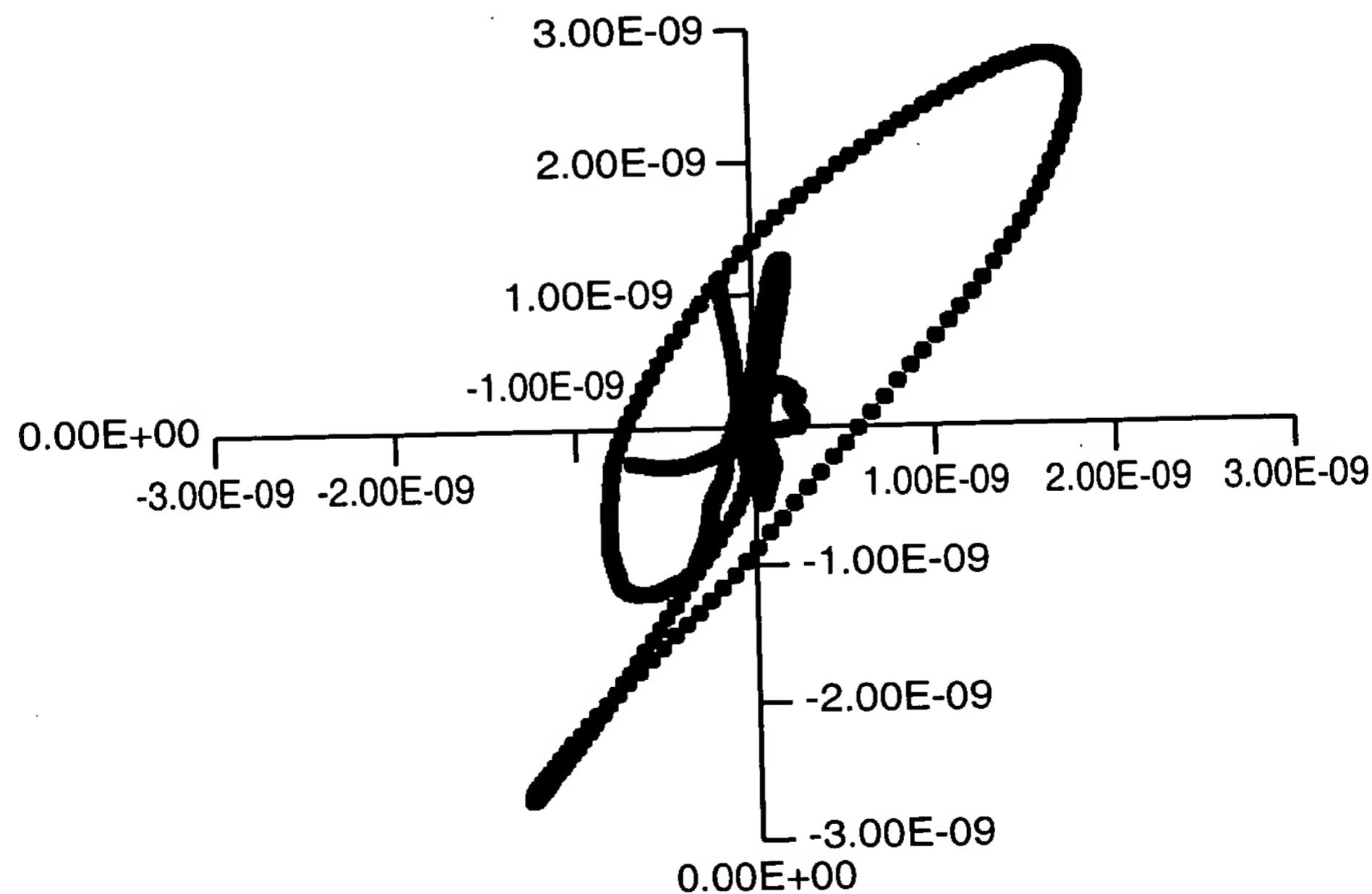
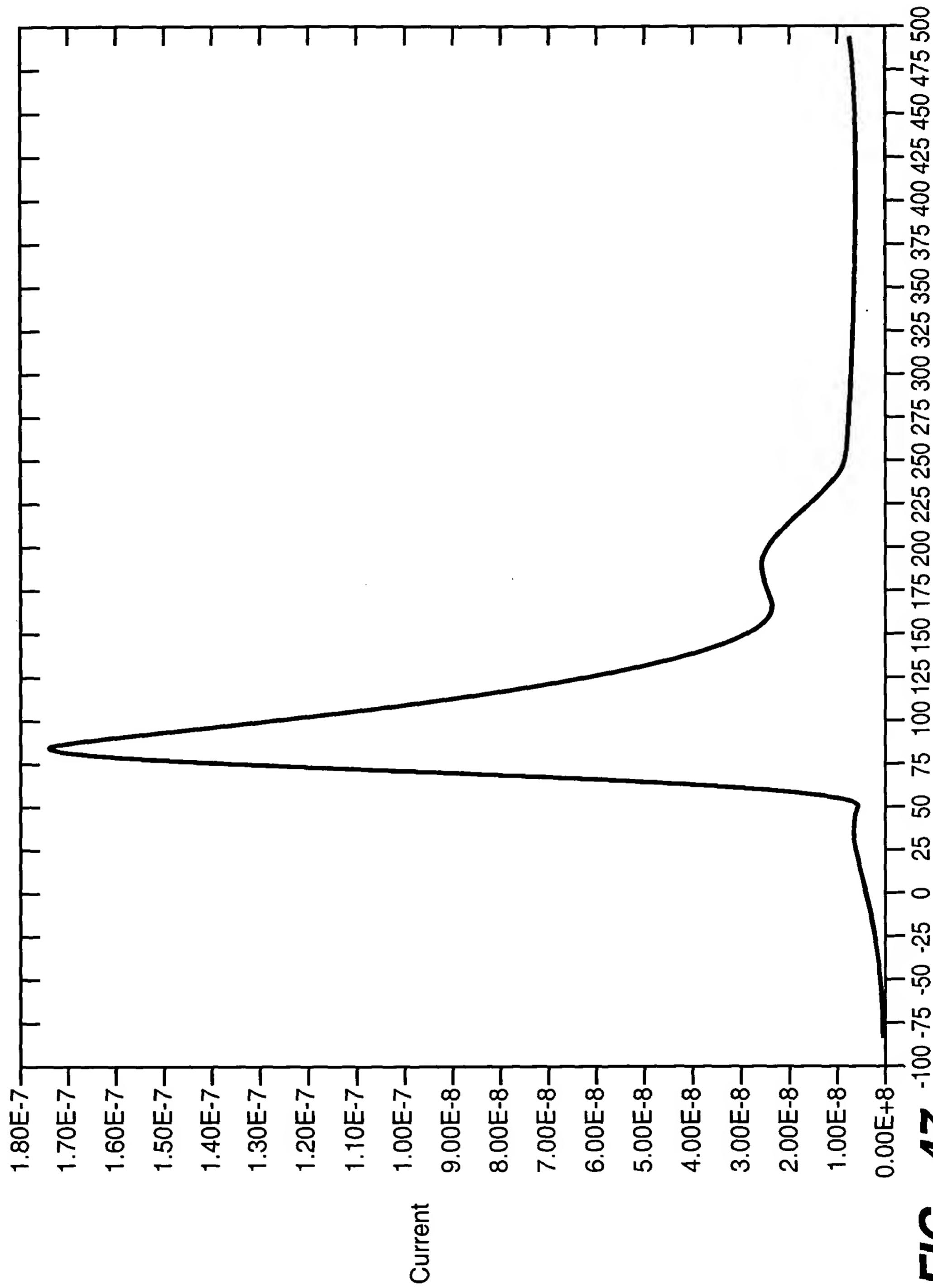
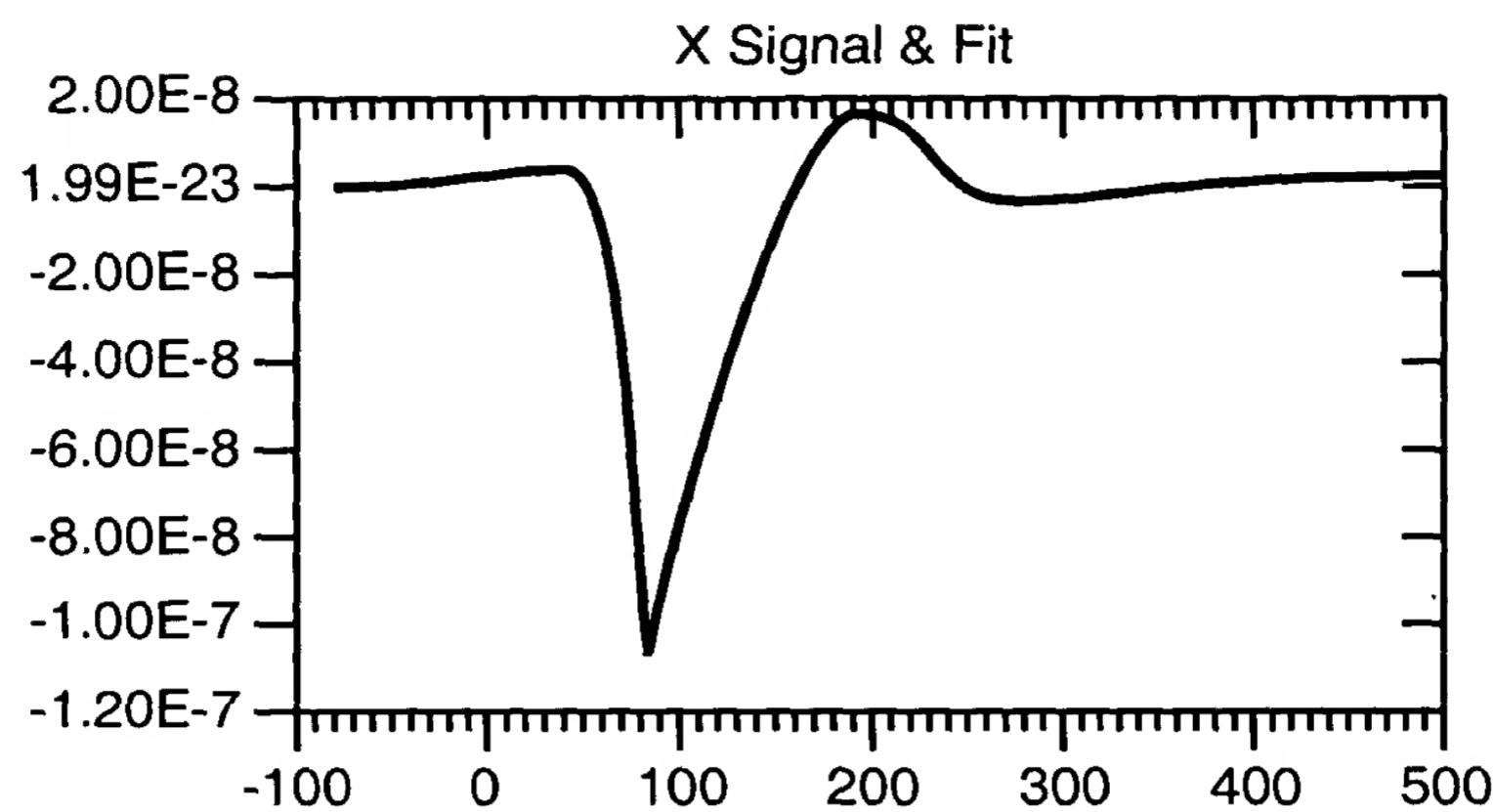
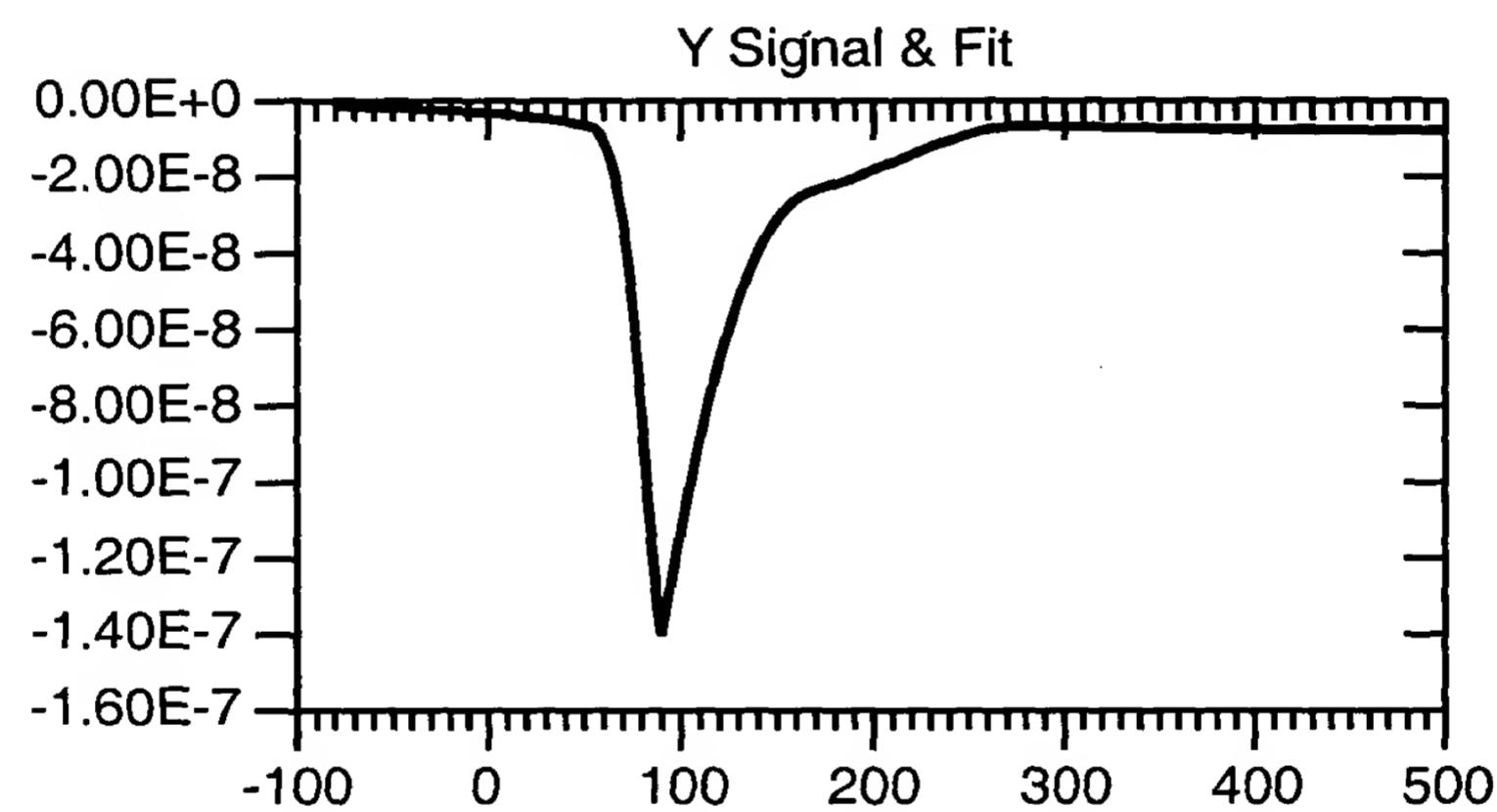
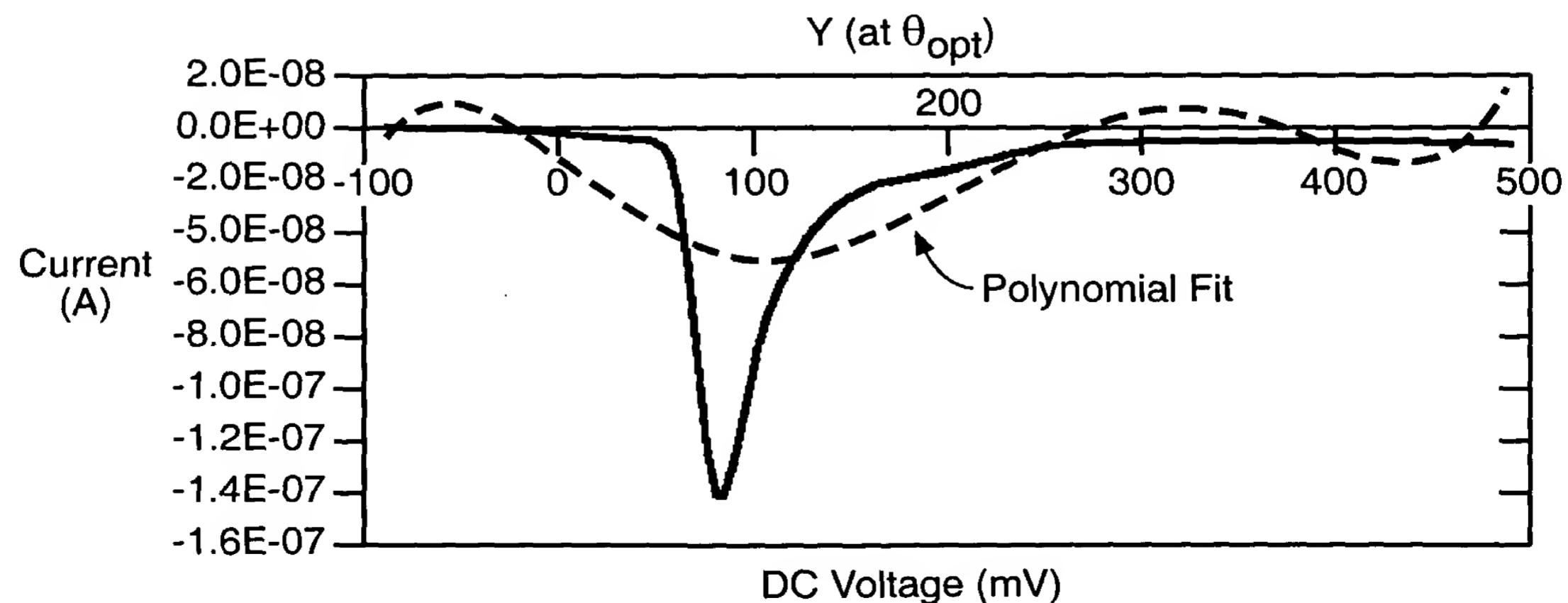


FIG._46



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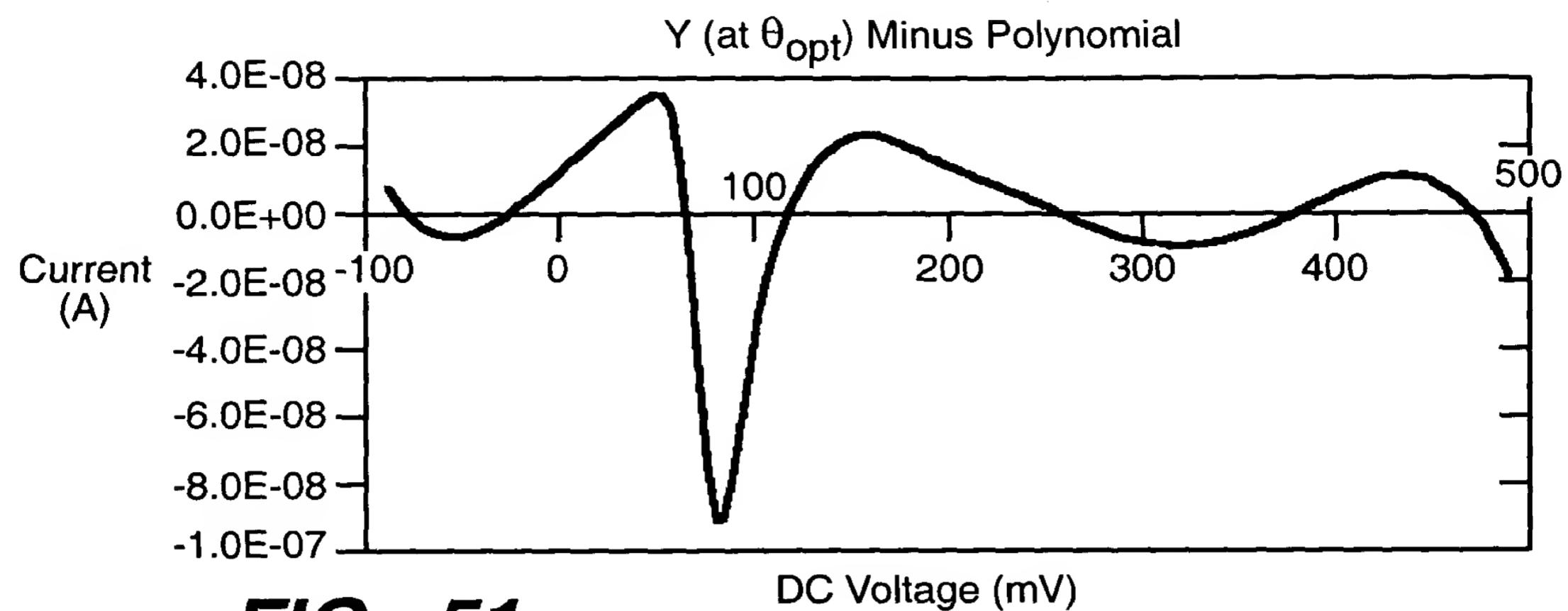
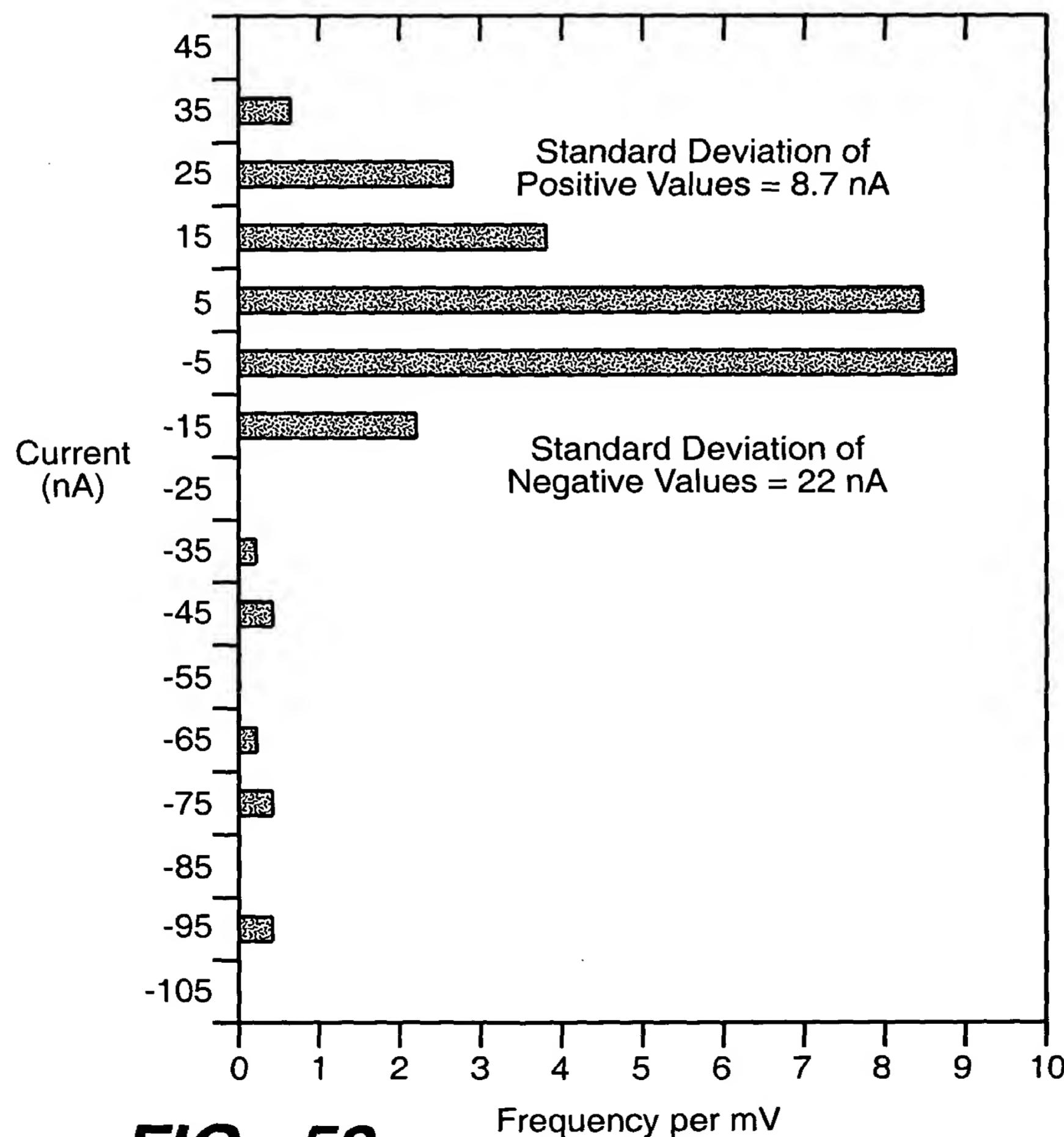
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**FIG. 48****FIG. 49****FIG. 50**

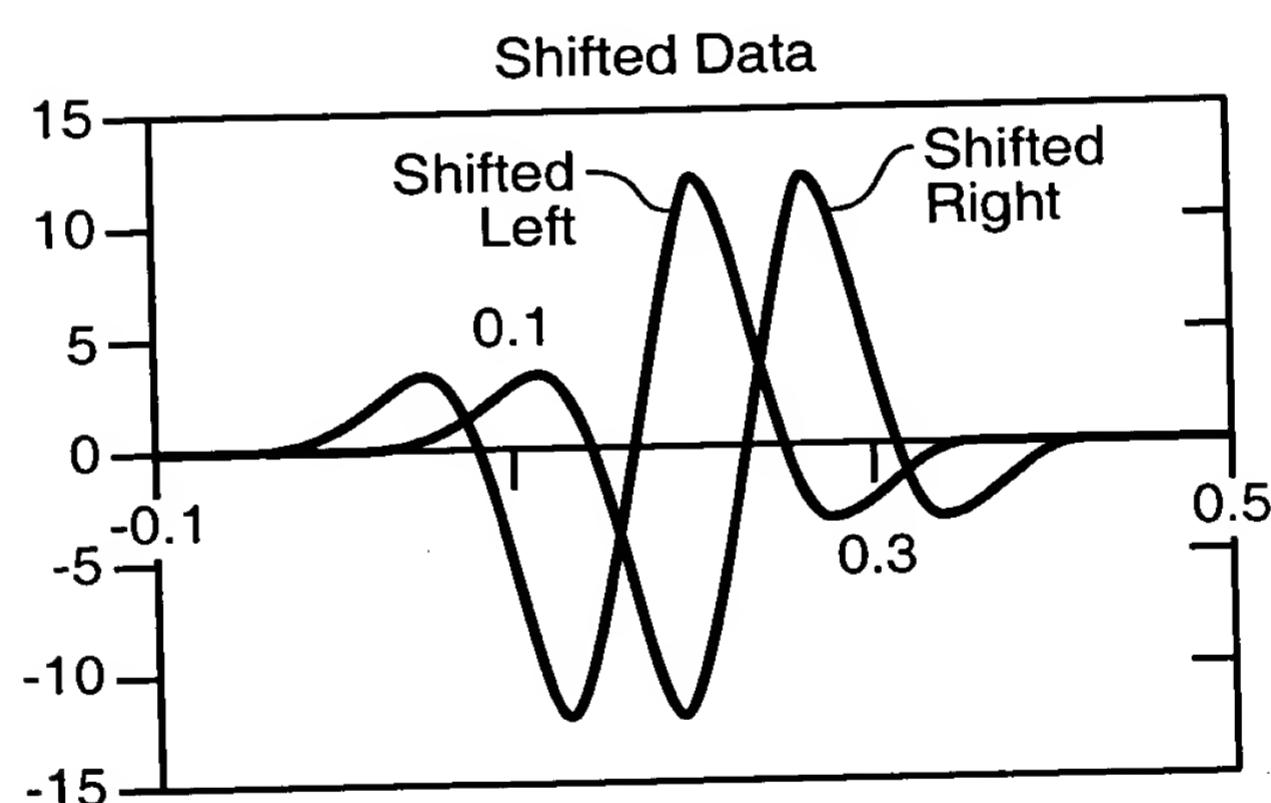
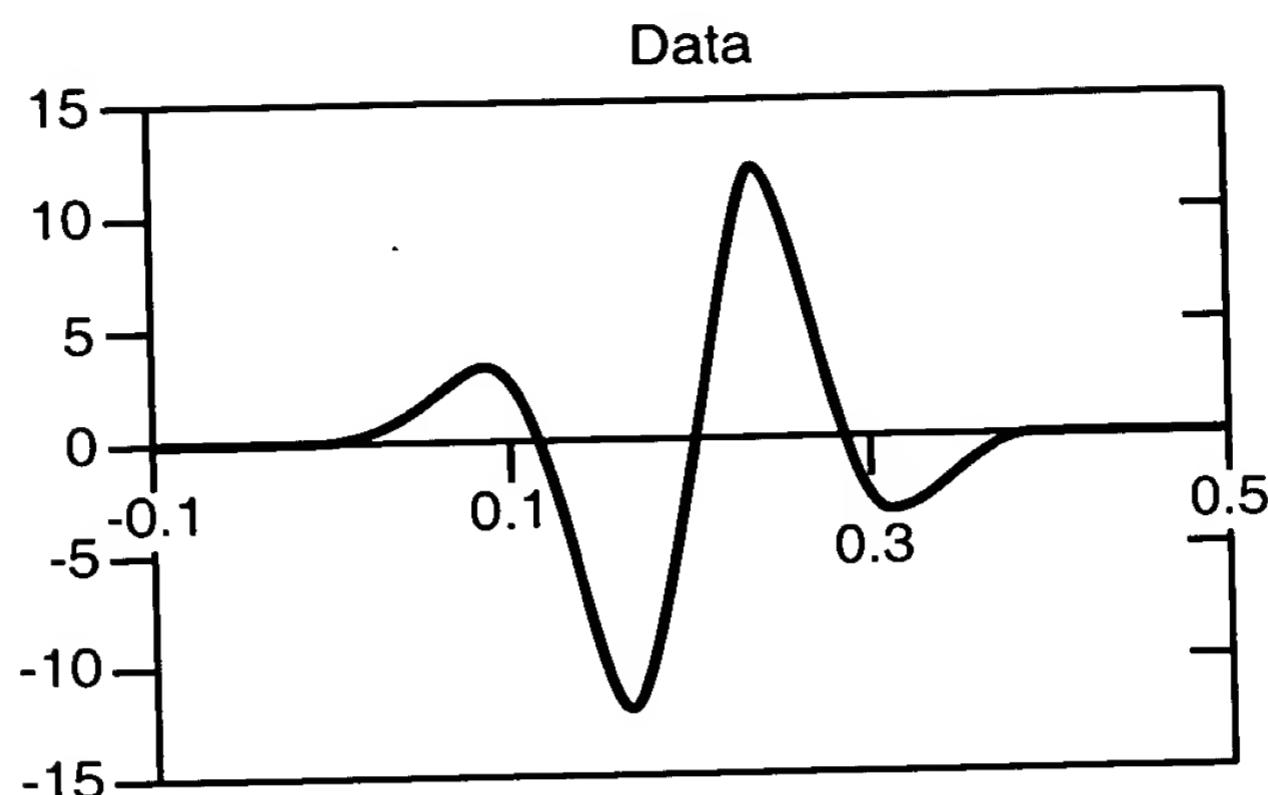
+

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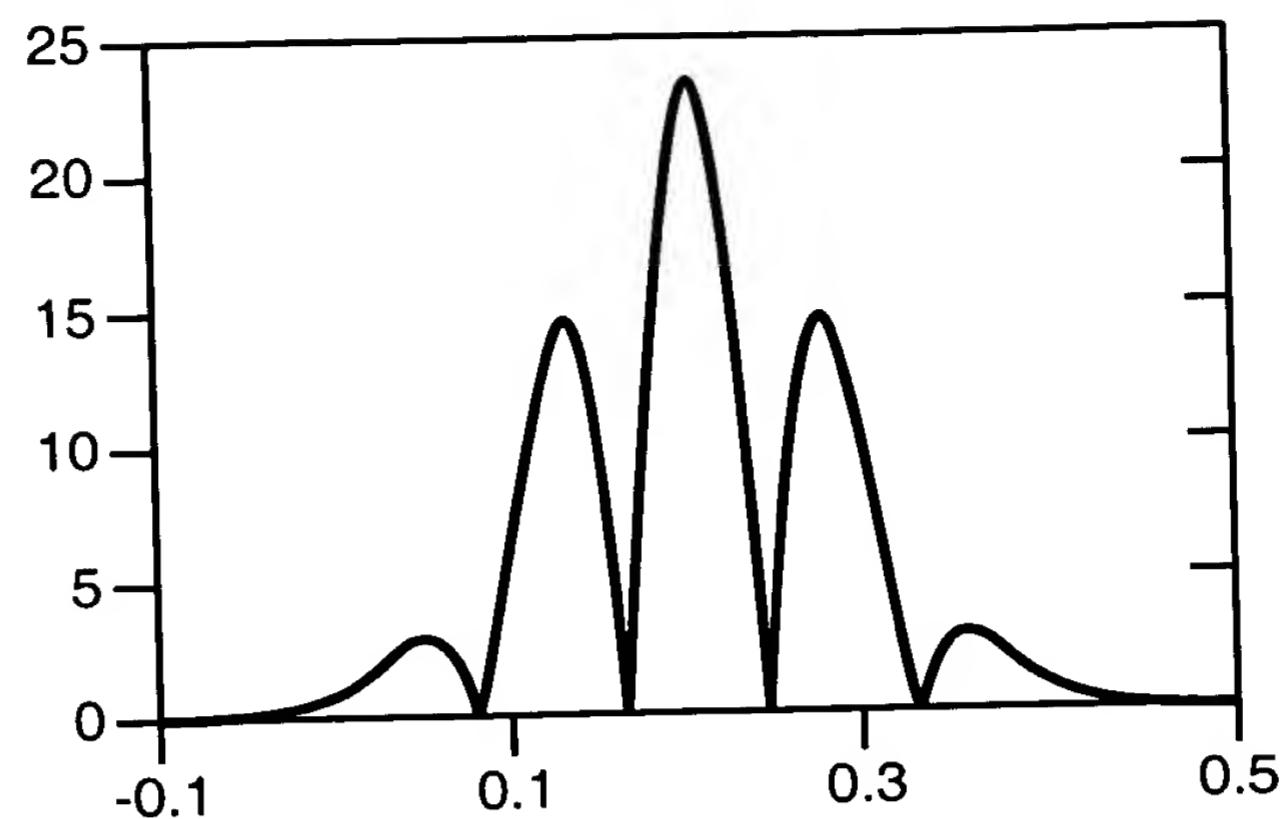
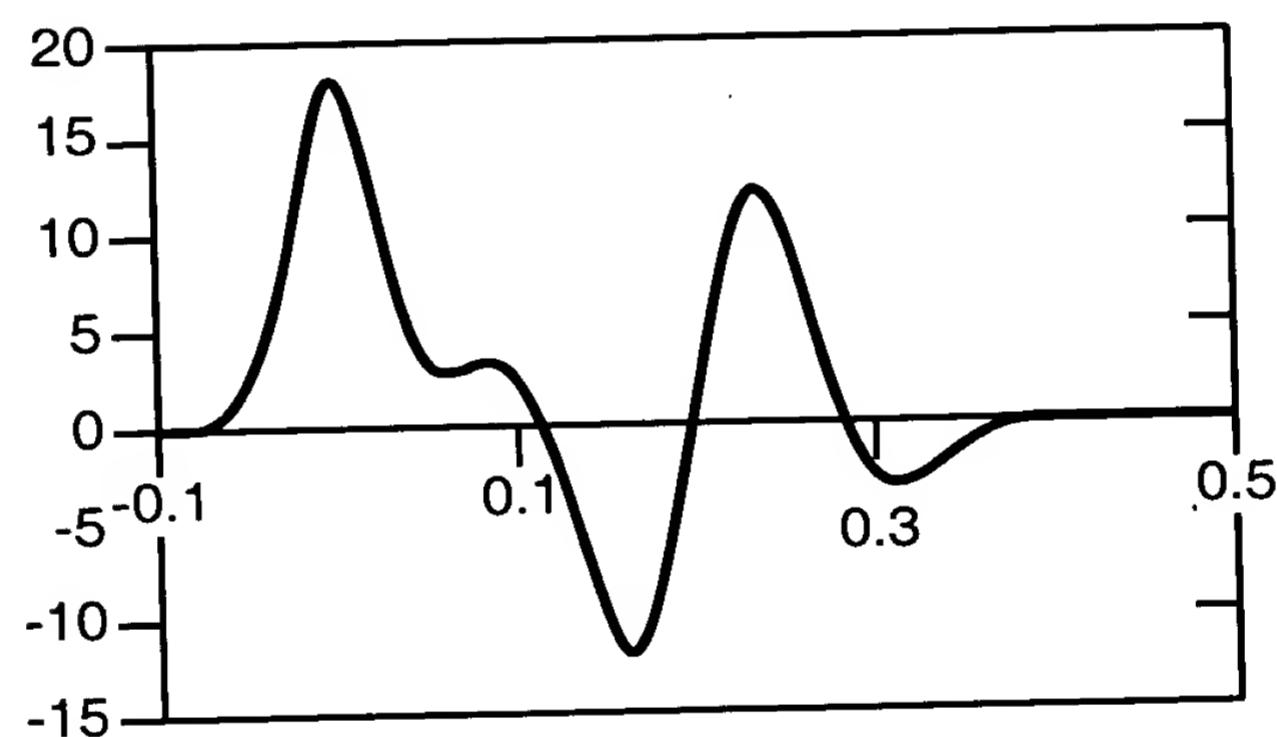
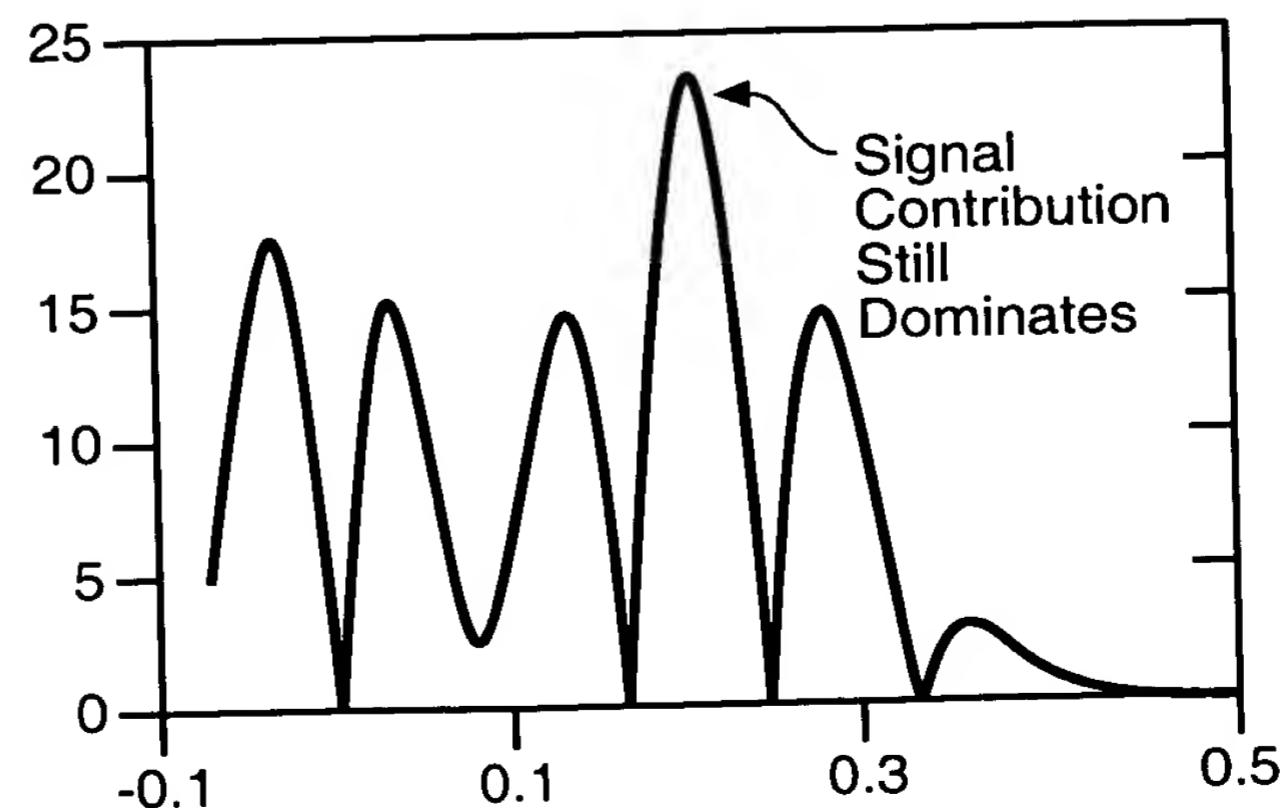
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**FIG._51****FIG._52**

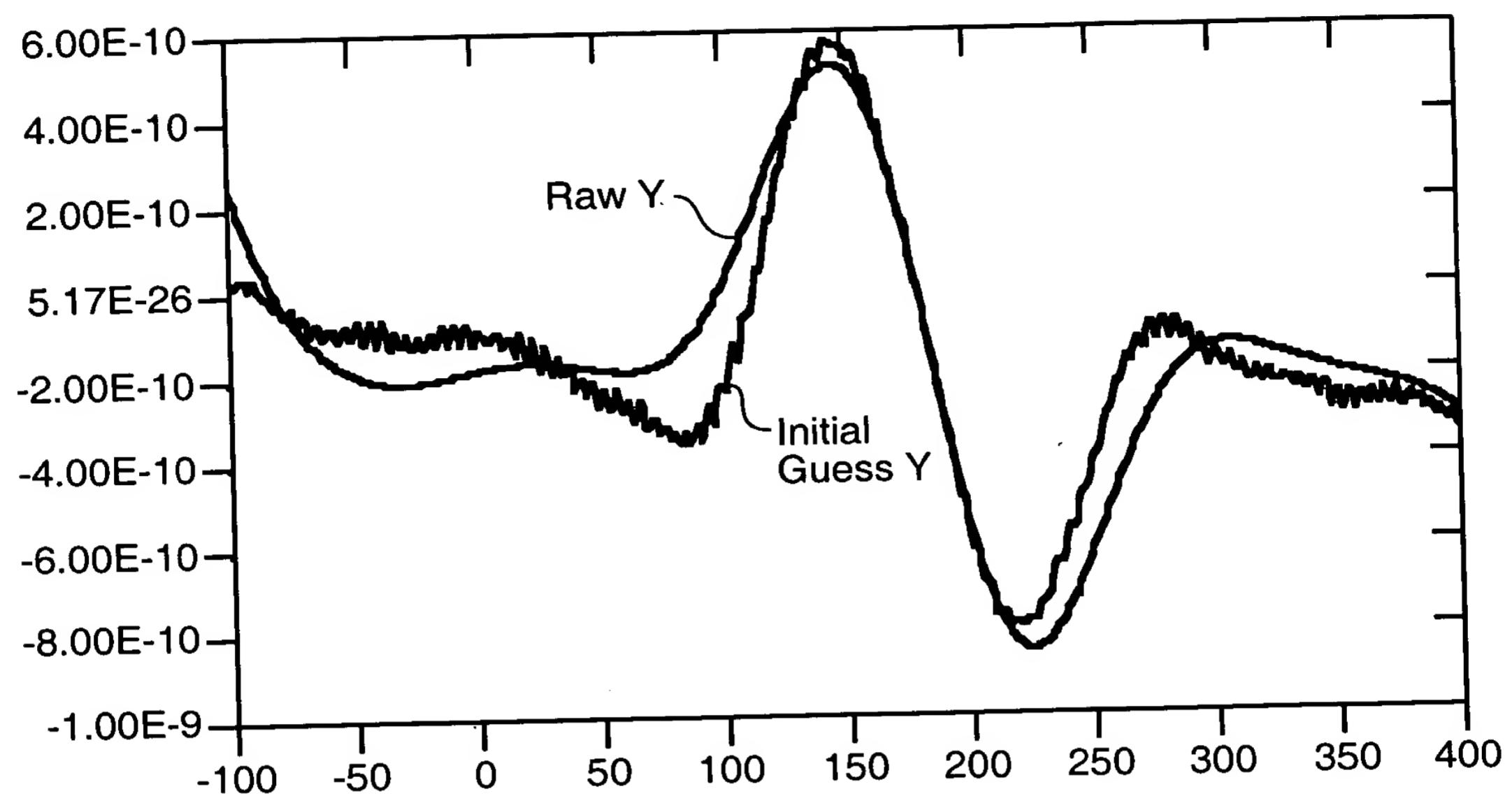
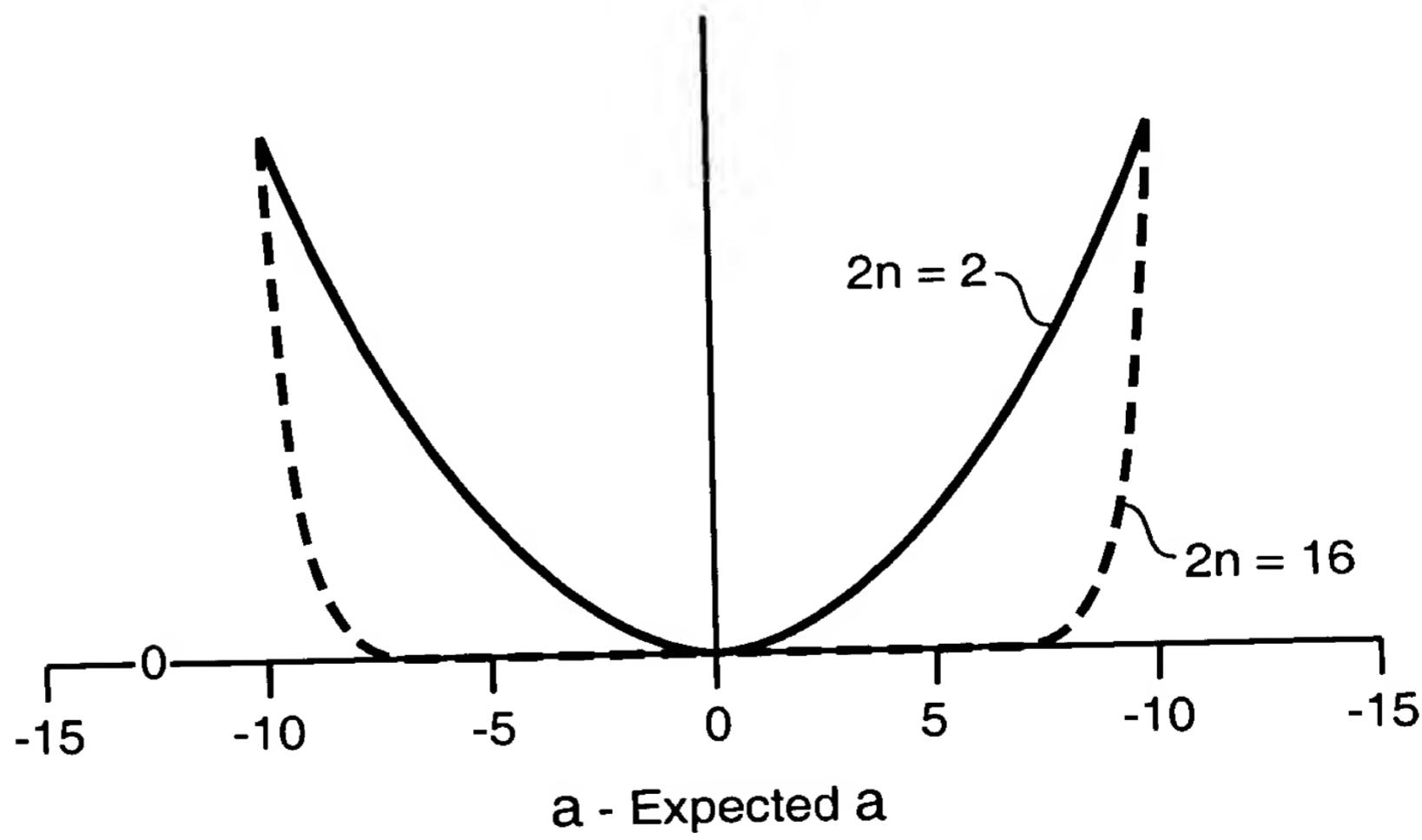
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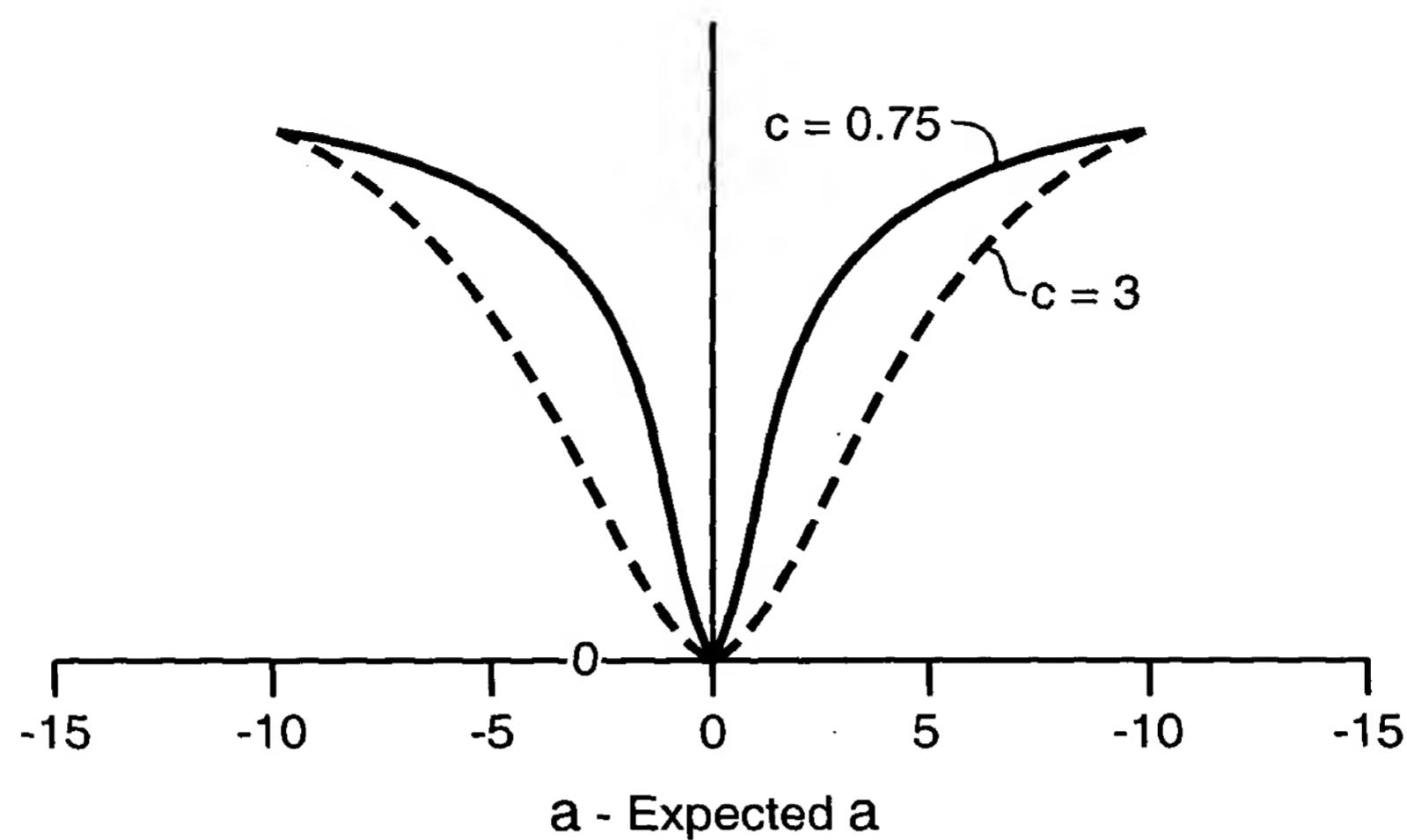
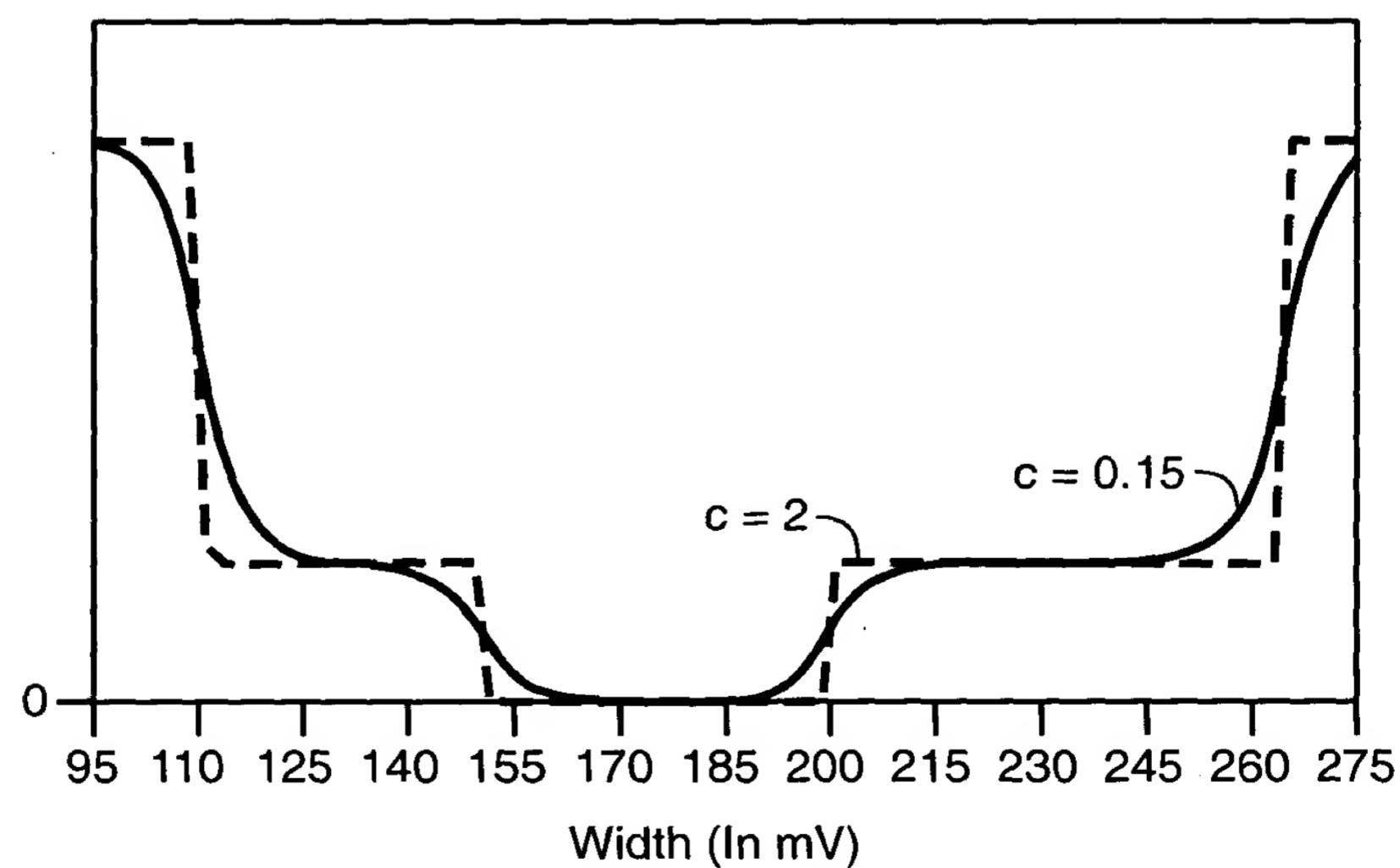
**FIG._55****FIG._56****FIG._57**

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**FIG._58****FIG._59**

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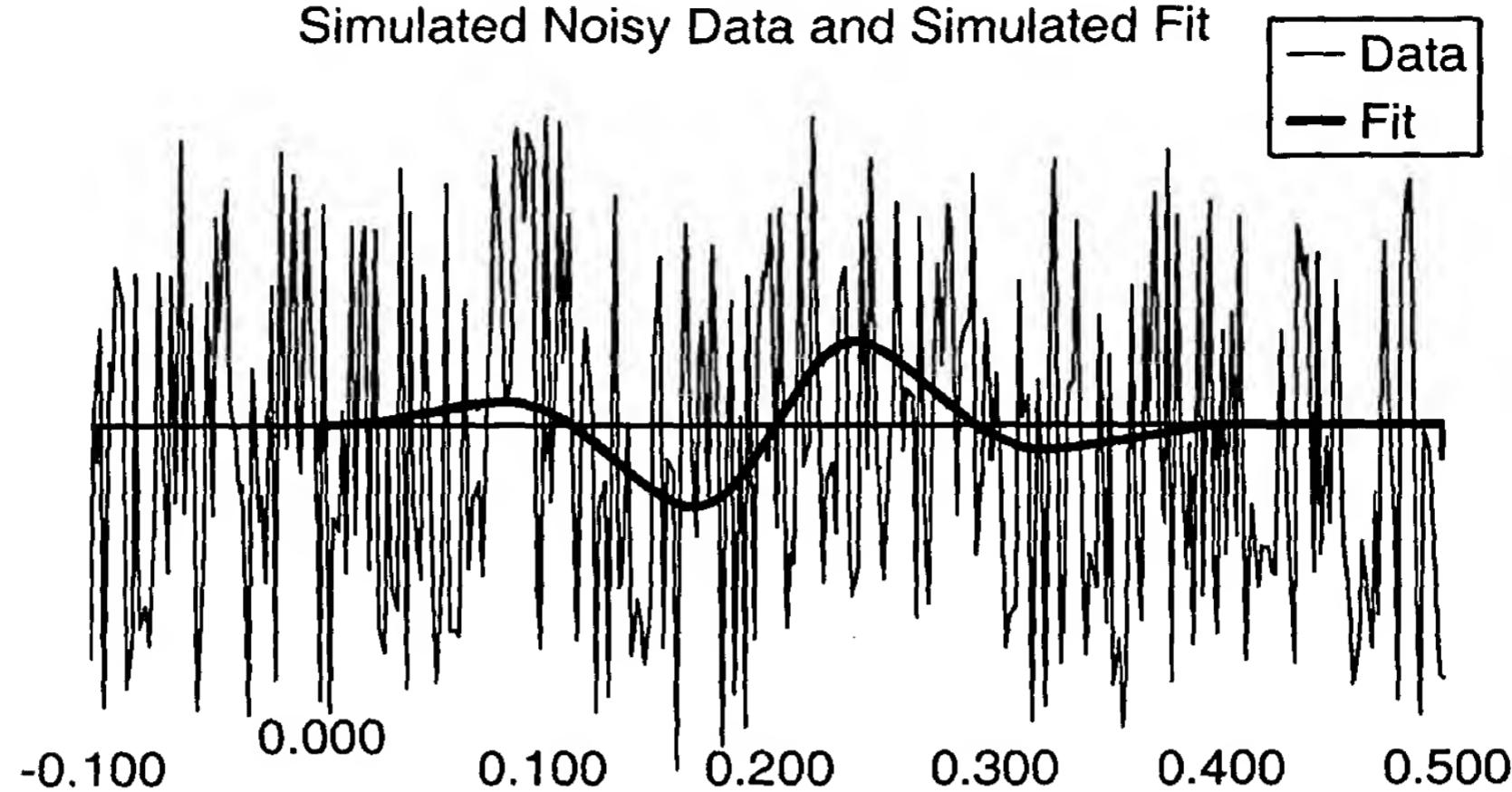
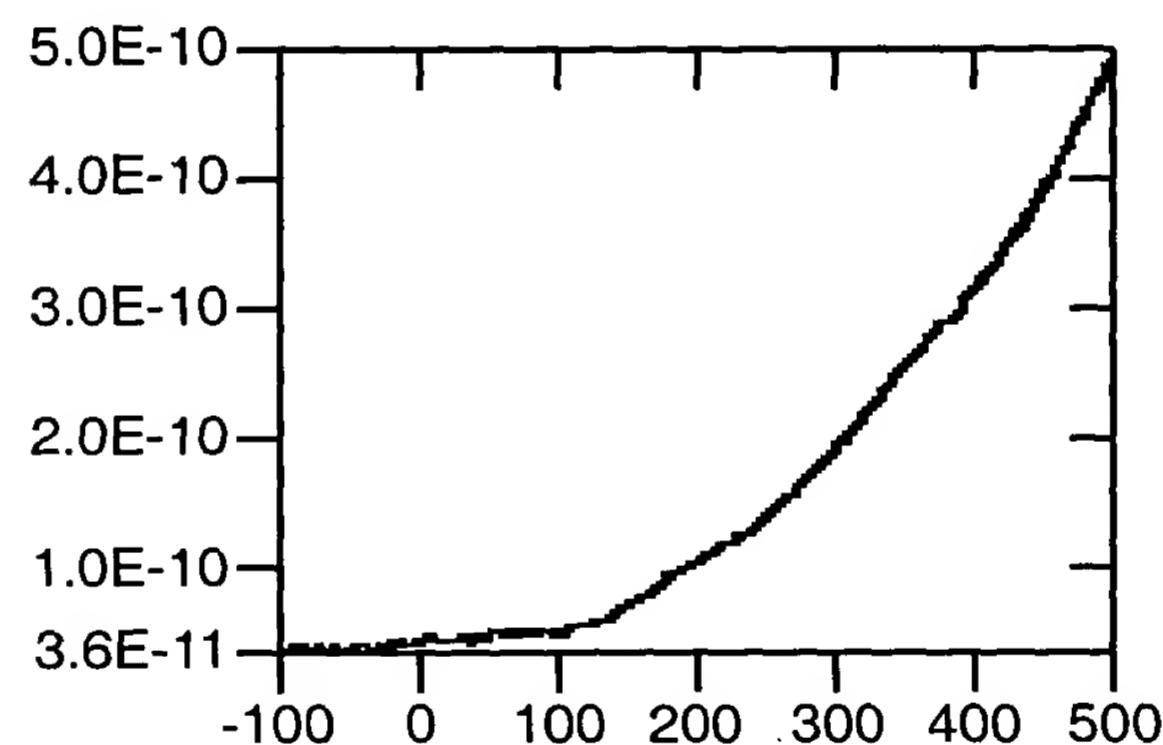
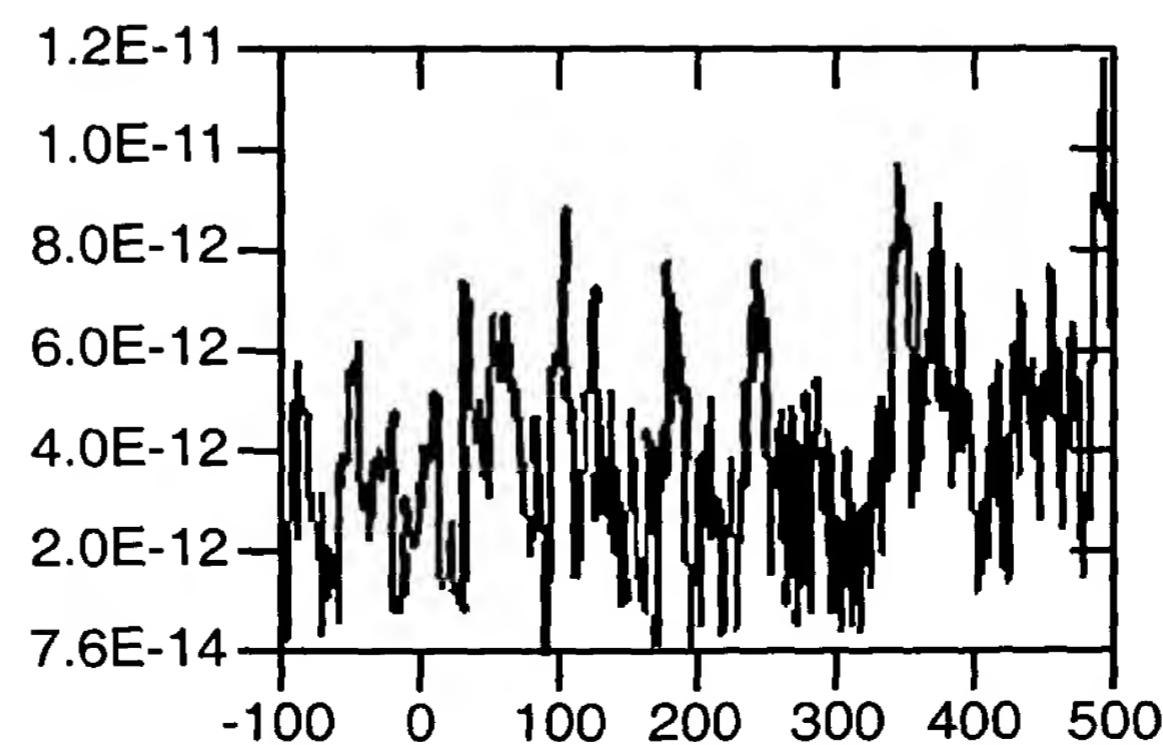
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**FIG._60****FIG._61**

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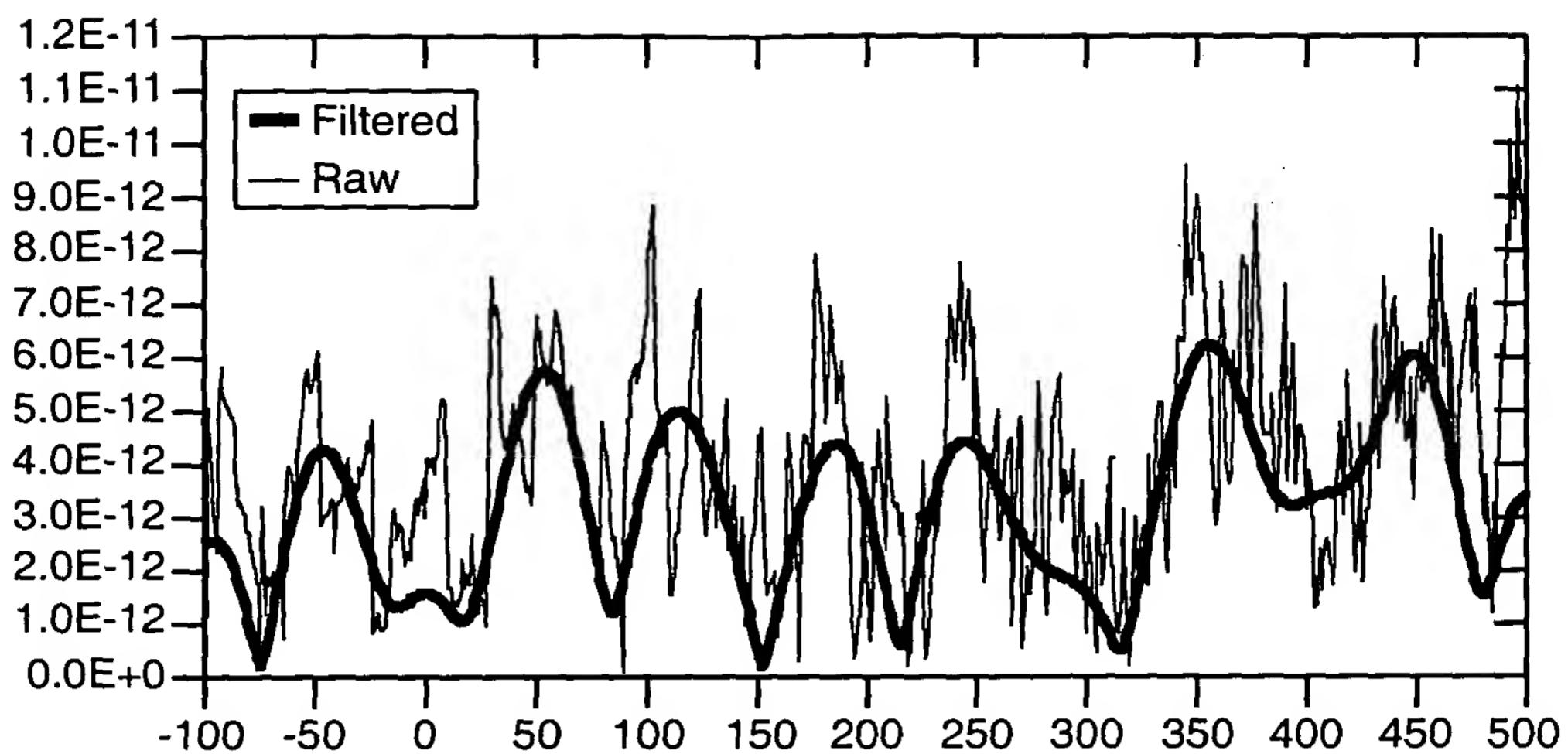
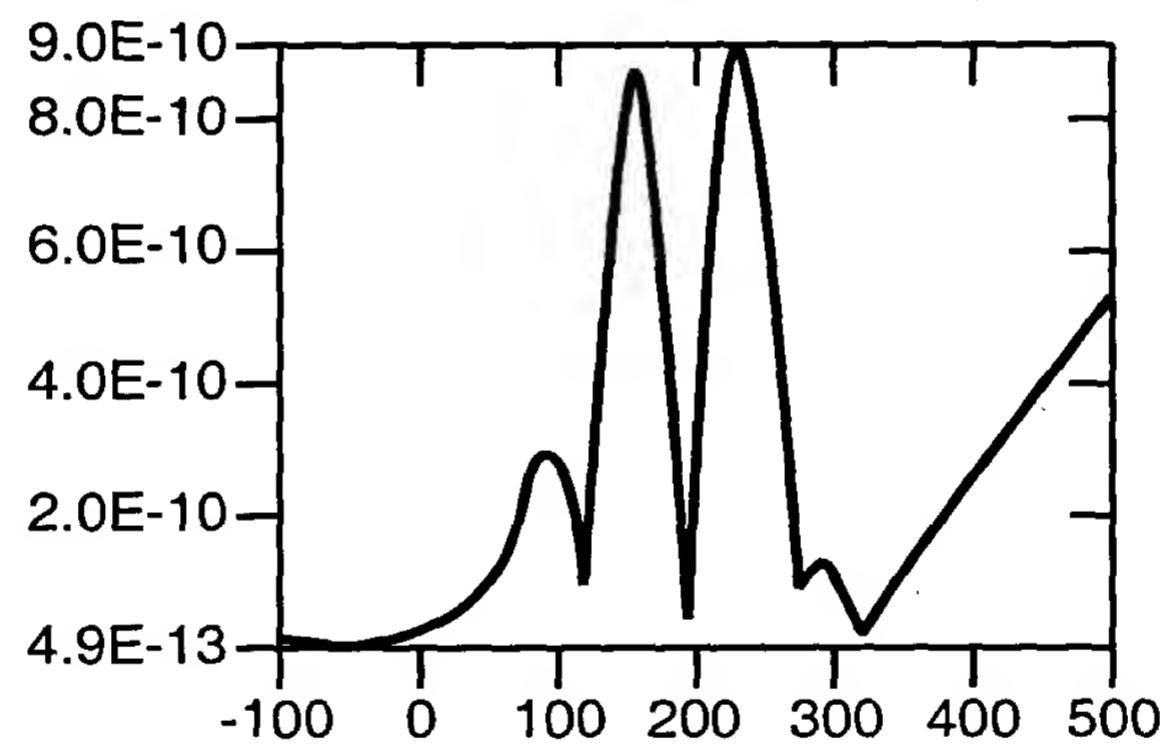
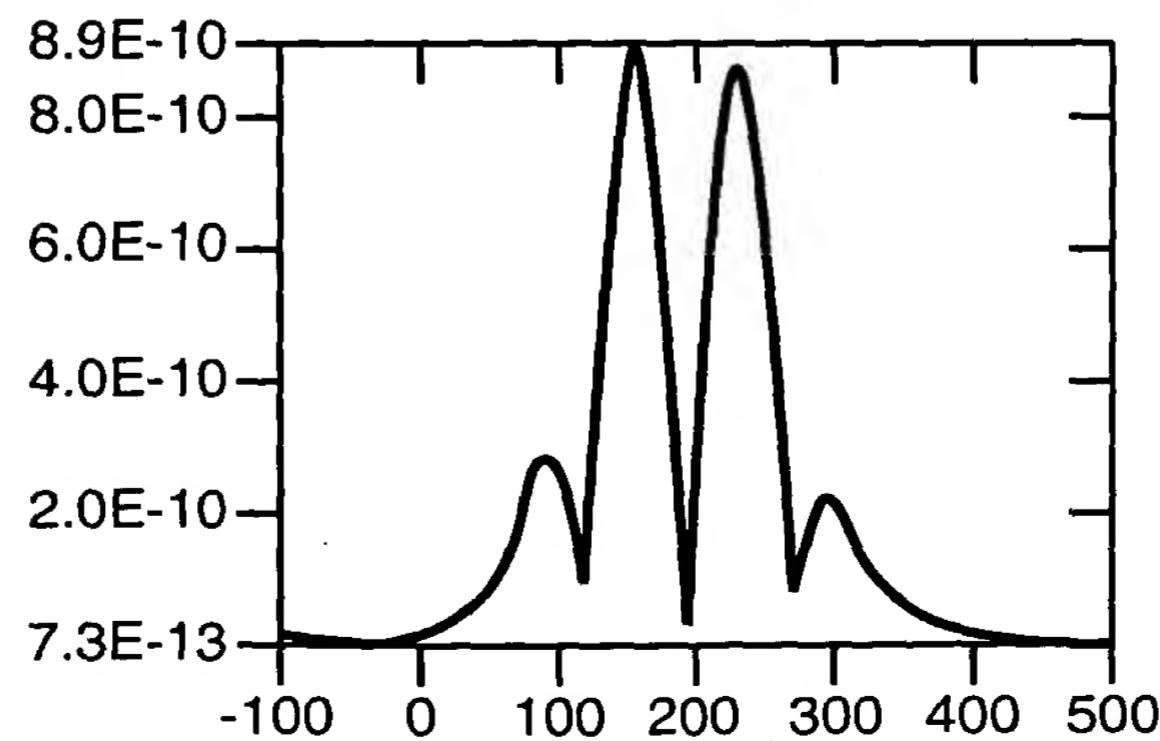
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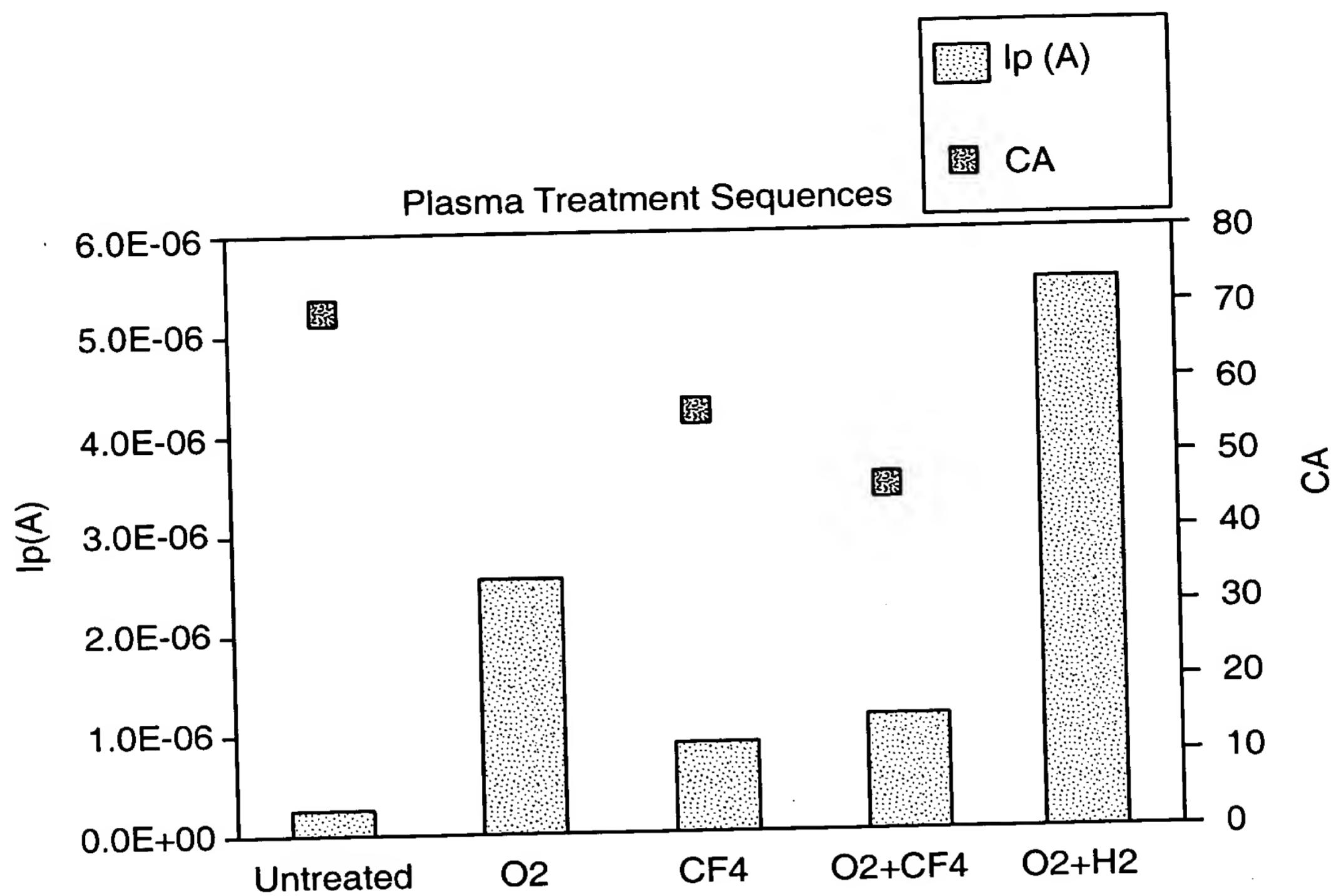
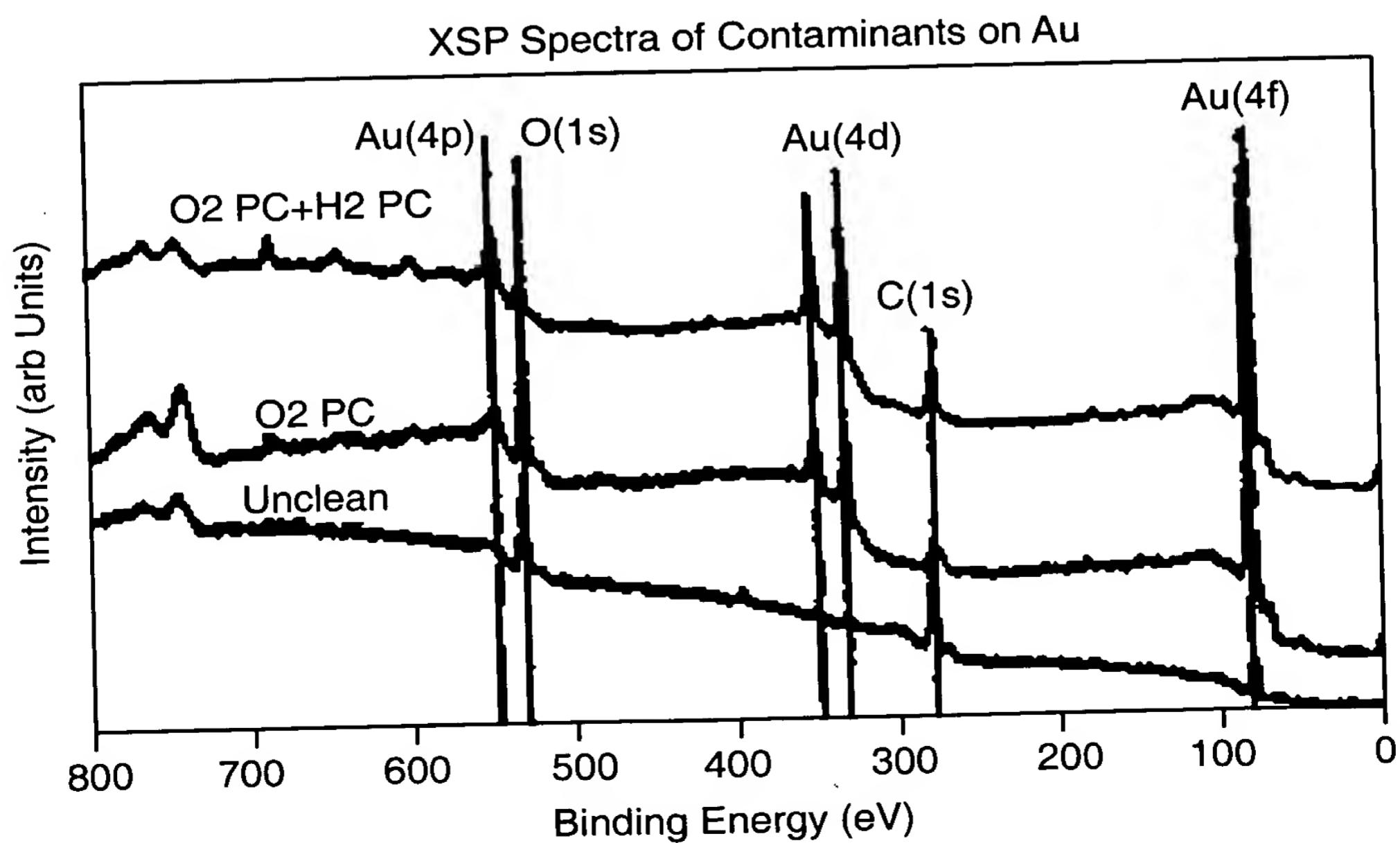
Simulated Noisy Data and Simulated Fit

**FIG._62****FIG._63****FIG._64**

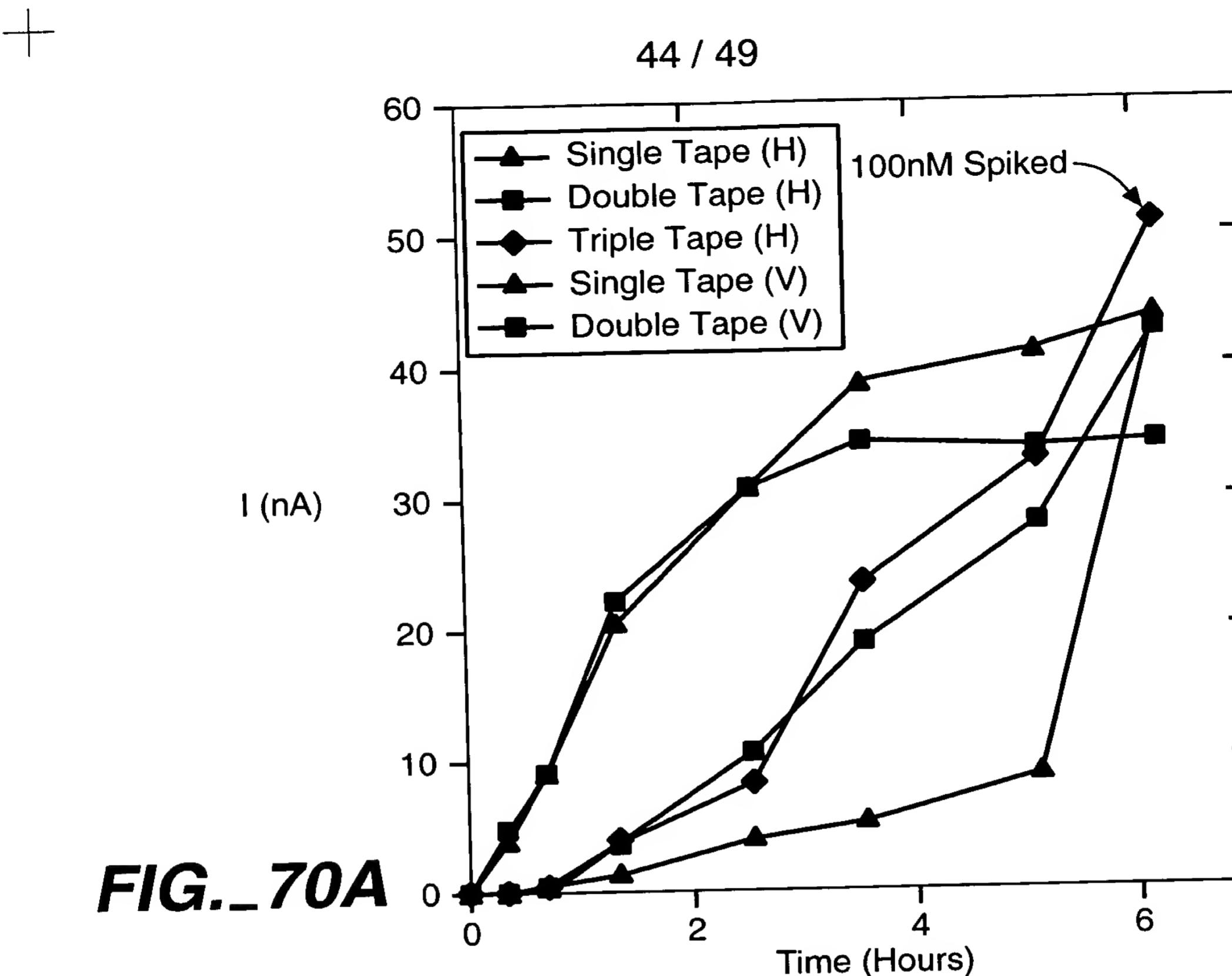
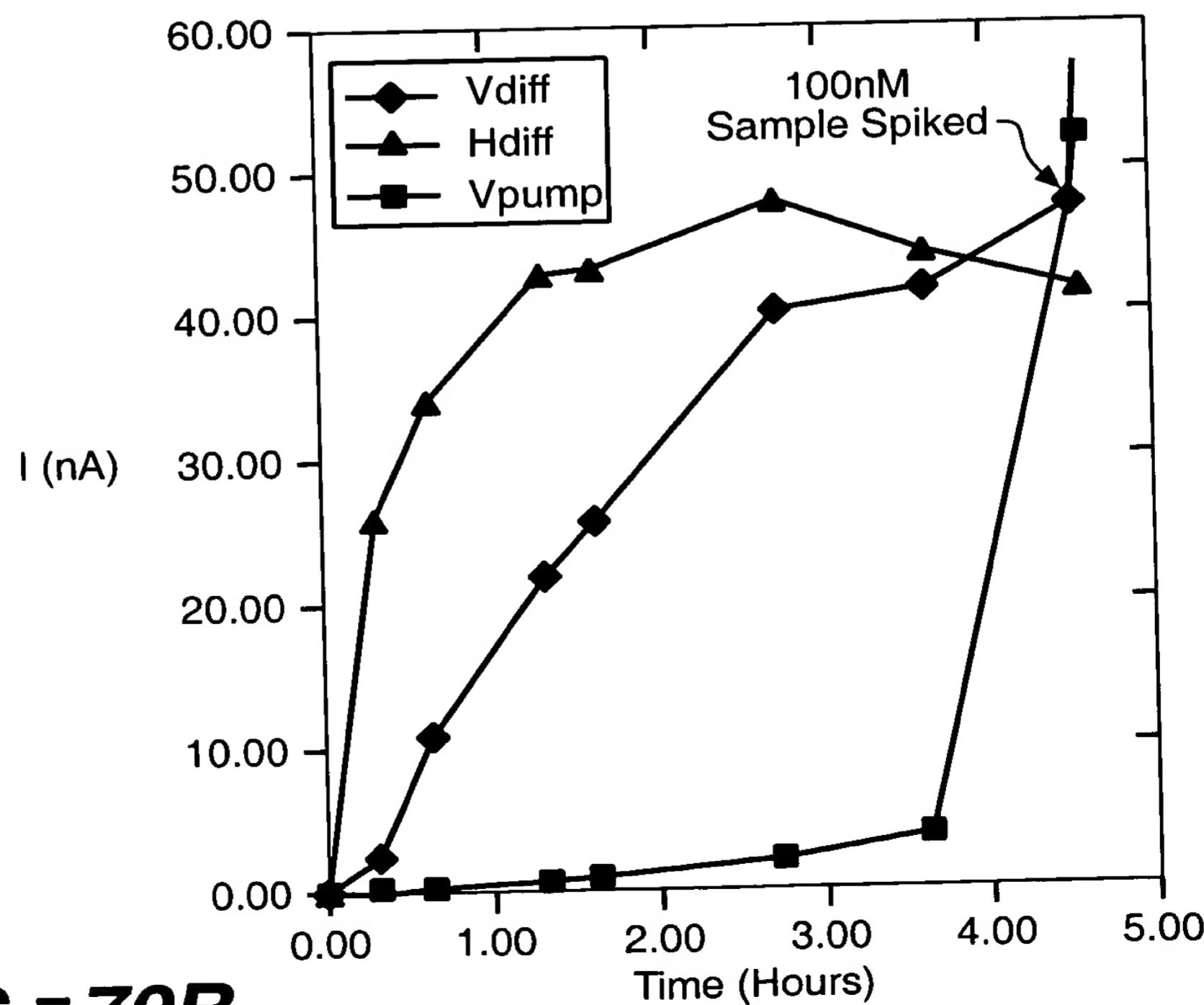
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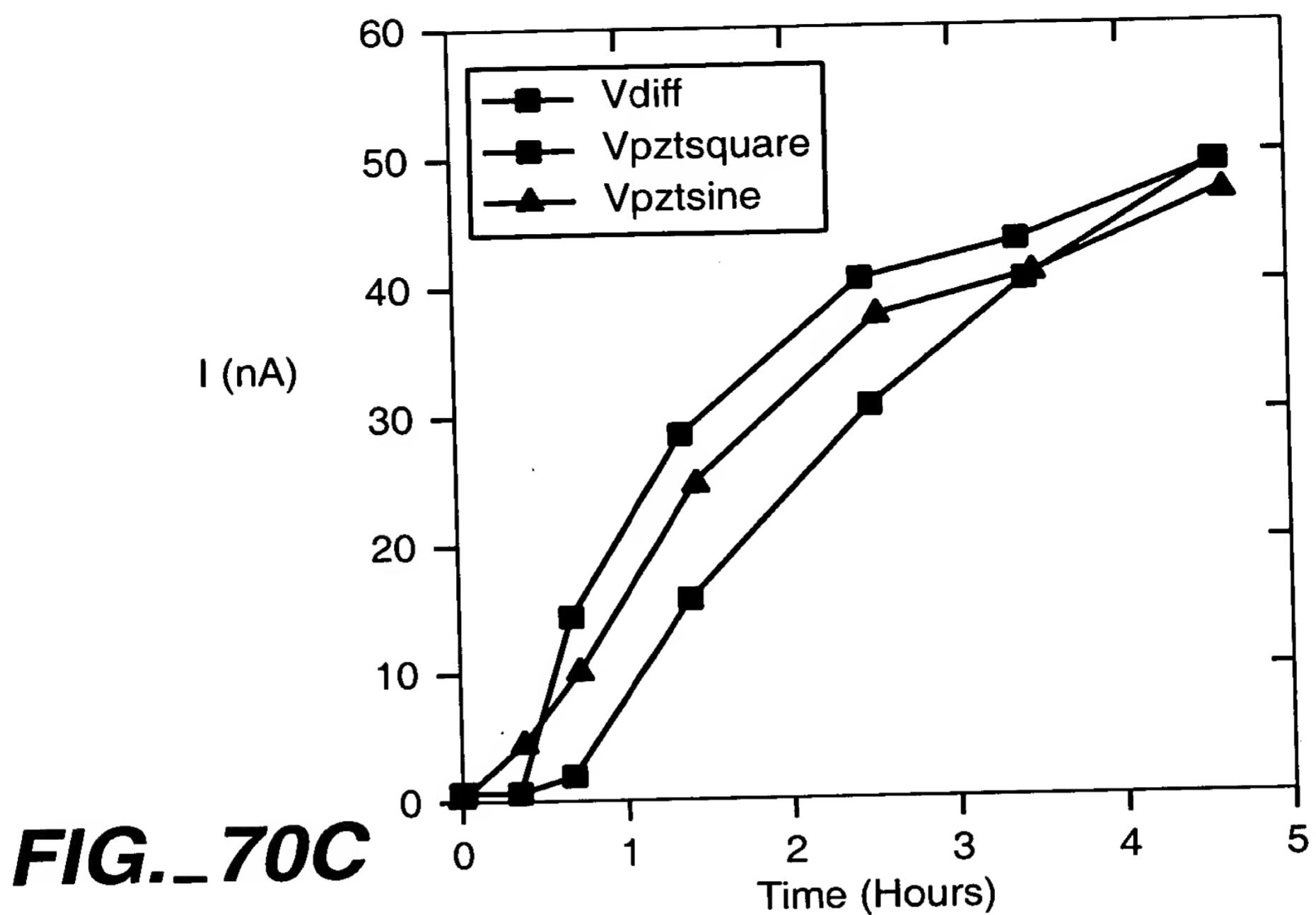
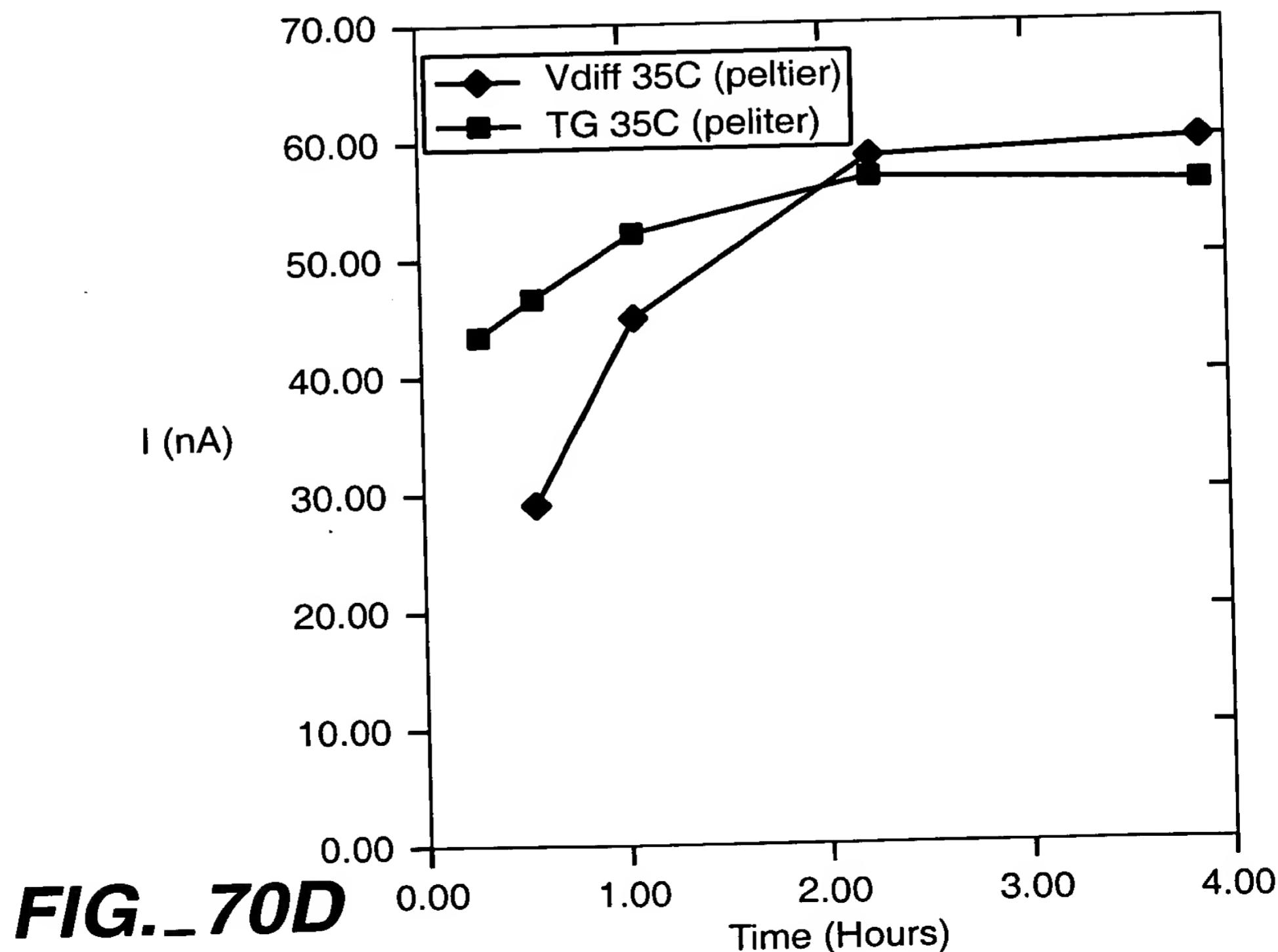
**FIG._65****FIG._66****FIG._67**

**FIG._68****FIG._69**

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**FIG.-70A****FIG.-70B**

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**FIG._70C****FIG._70D**

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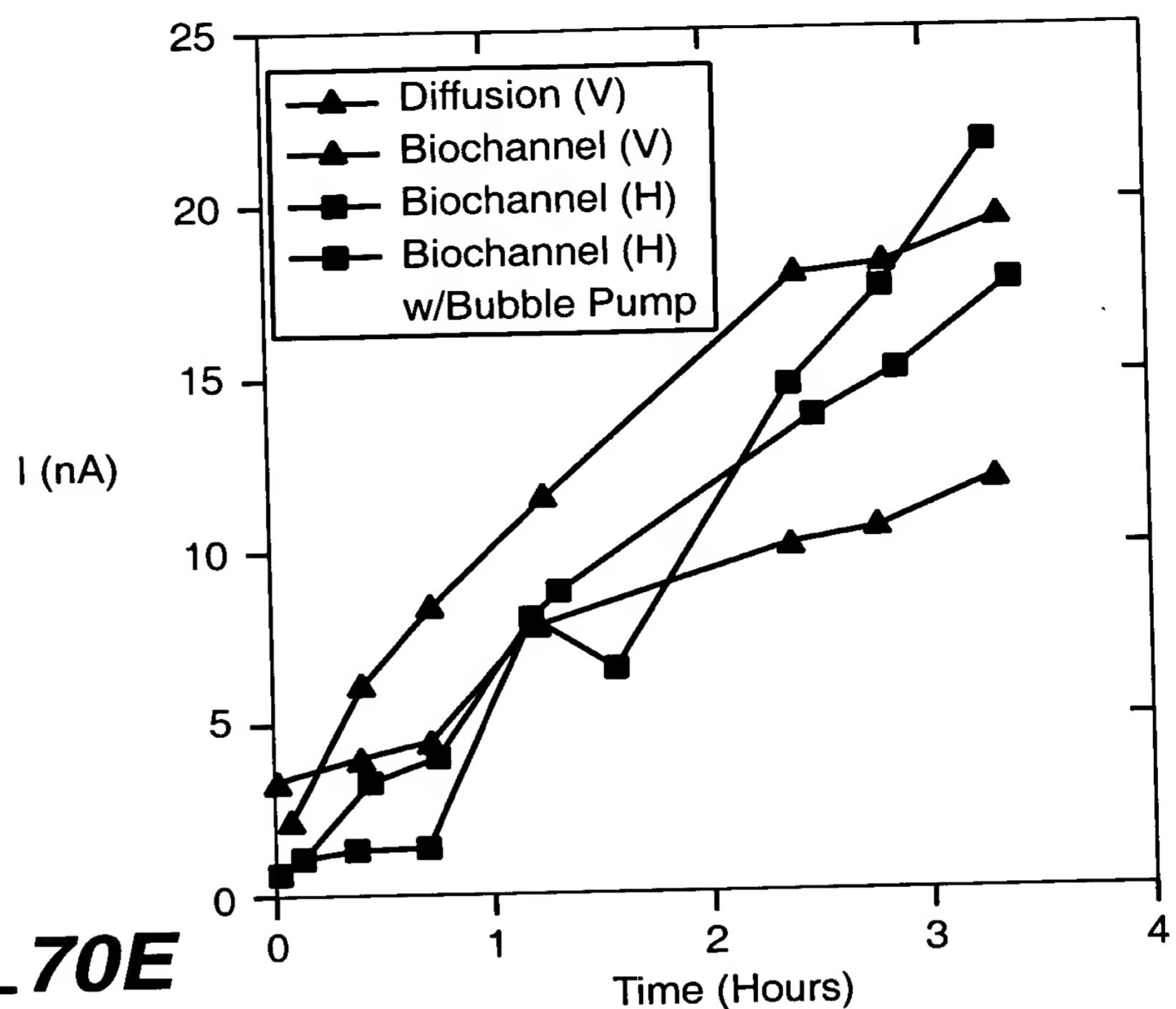
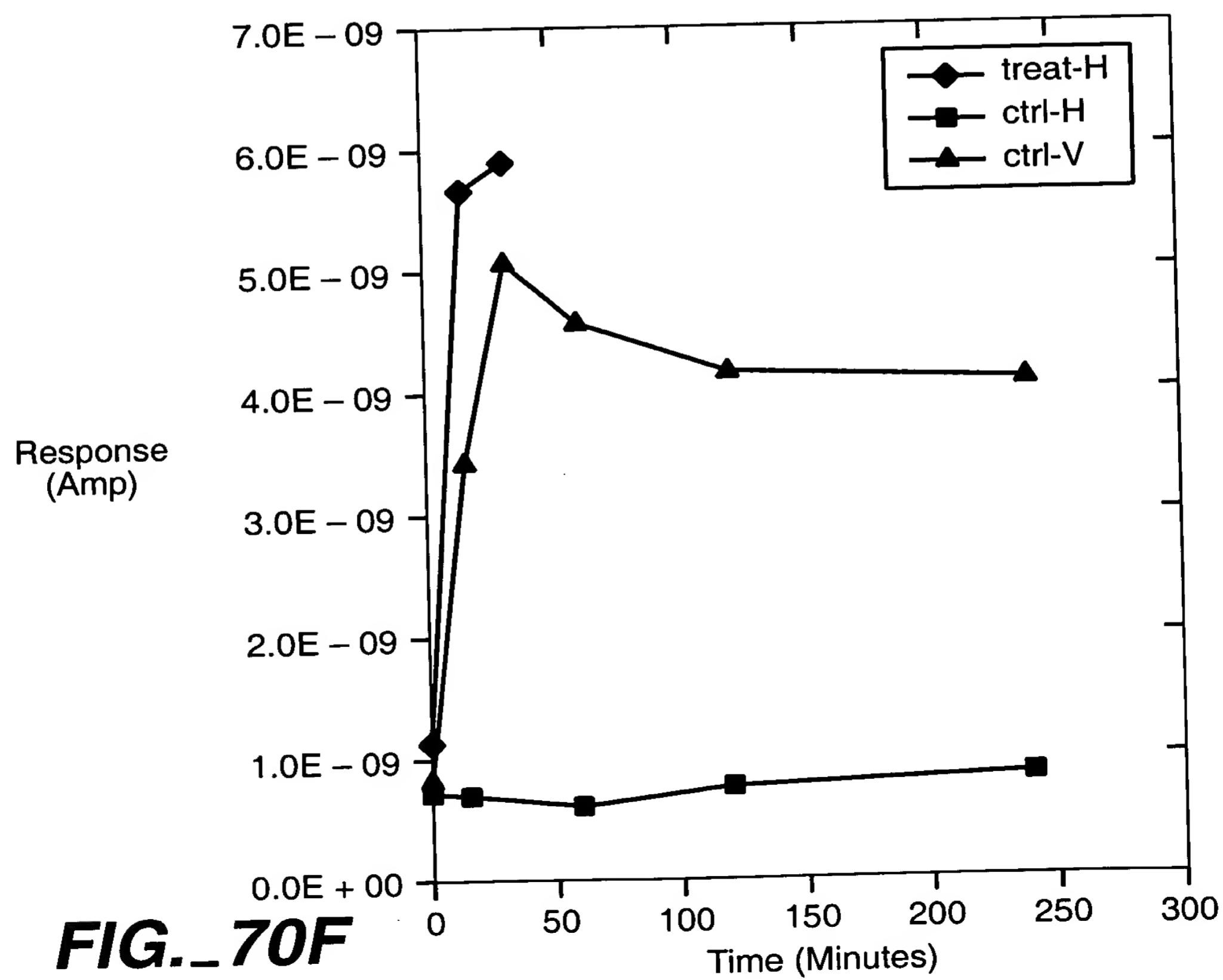
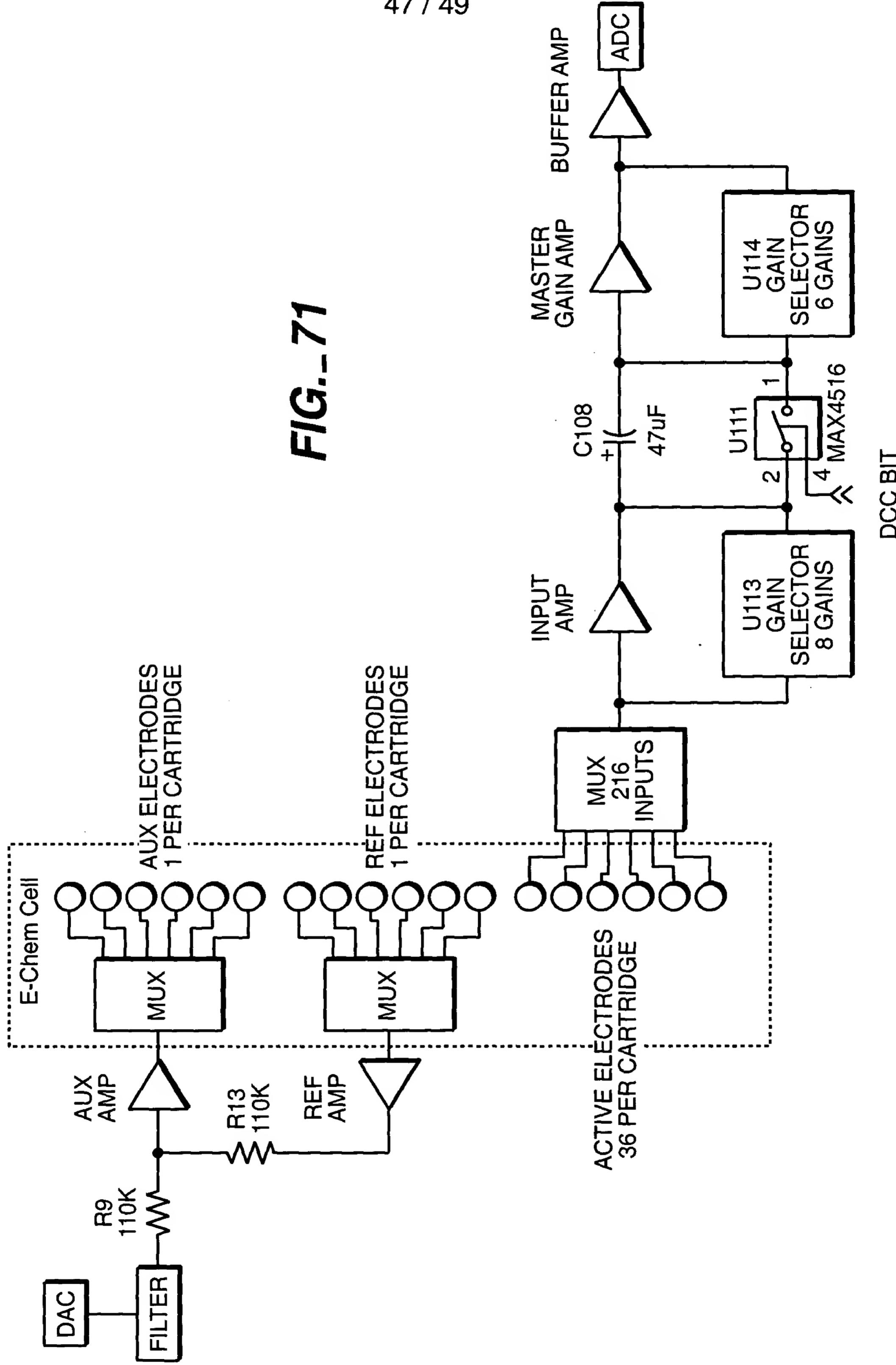
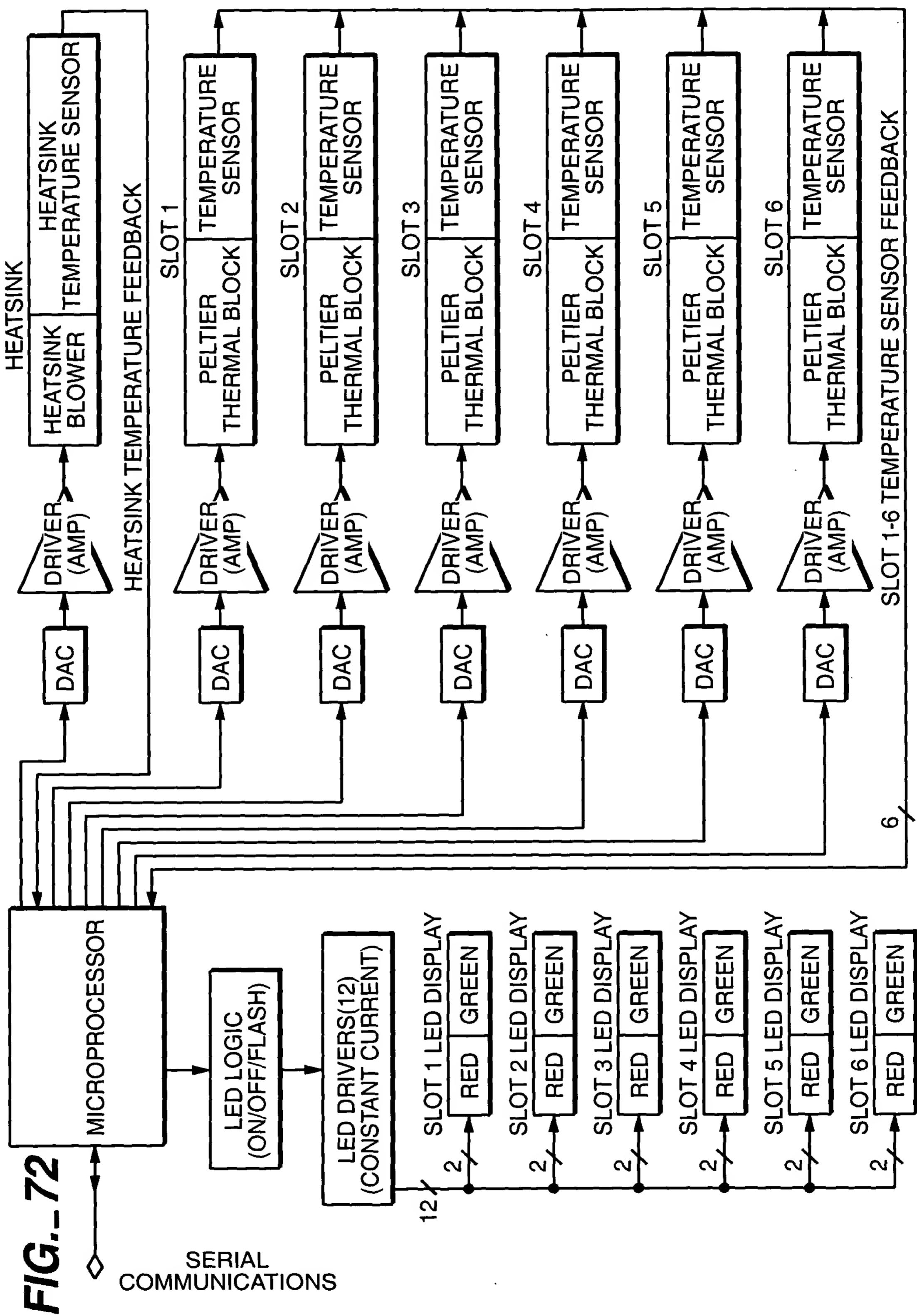
**FIG._70E****FIG._70F**

FIG. 71





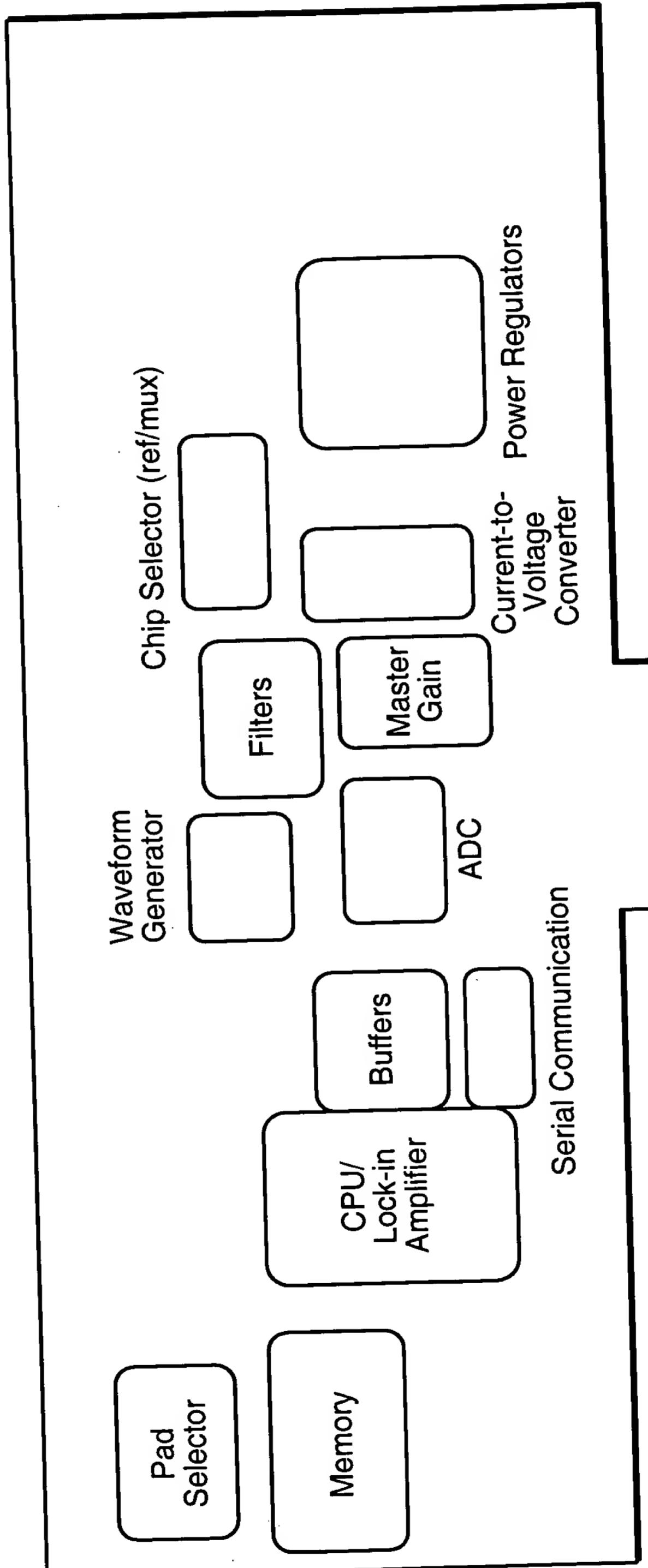


FIG.- 73